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# Review of The Birth of the Gods and the Origins of Agriculture by Jacques Cauvin, translated by Trevor Watkins (New Studies in Archaeology).

**Citation**
Cauvin, Jacques, Ian Hodder, Gary O. Rollefson, Ofer Bar-Yosef, and Trevor Watkins. 2001. Review of The Birth of the Gods and the Origins of Agriculture by Jacques Cauvin, Translated by Trevor Watkins (New Studies in Archaeology). Cambridge Archaeological Journal 11, no. 01: 105-121.

**Published Version**
doi:10.1017/S0959774301000063

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# The Birth of the Gods and the Origins of Agriculture by Jacques Cauvin, translated by Trevor Watkins (New Studies in Archaeology.) Cambridge: Cambridge University Press, 2000; ISBN 0-521-65135-2 hardback £37.50 & \$59.95 Reviewed by Ian Hodder, Gary O. Rollefson, Ofer Bar-Yosef with a response by Trevor Watkins


Jacques Cauvin, Ian Hodder, Gary O. Rollefson, Ofer Bar-Yosef and Trevor Watkins



Cambridge Archaeological Journal / Volume 11 / Issue 01 / April 2001, pp 105 - 121
DOI: 10.1017/S0959774301000063, Published online: 05 September 2001



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**How to cite this article:**
Jacques Cauvin, Ian Hodder, Gary O. Rollefson, Ofer Bar-Yosef and Trevor Watkins (2001). The Birth of the Gods and the Origins of Agriculture by Jacques Cauvin, translated by Trevor Watkins (New Studies in Archaeology.) Cambridge: Cambridge University Press, 2000; ISBN 0-521-65135-2 hardback £37.50 & \$59.95 Reviewed by Ian Hodder, Gary O. Rollefson, Ofer Bar-Yosef with a response by Trevor Watkins. Cambridge Archaeological Journal, 11, pp 105-121 doi:10.1017/S0959774301000063

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Cambridge Archaeological Journal 11:1 (2001), 105–21

# Review Feature

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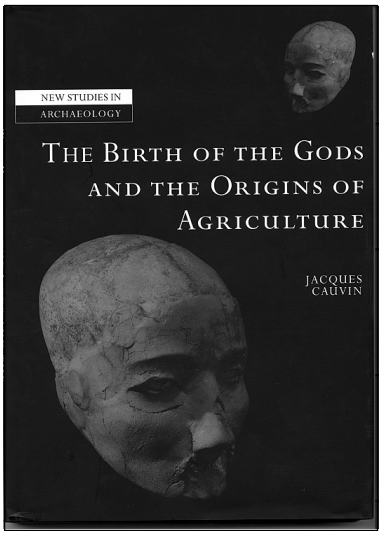


*When, almost a century ago, Raphael Pumpelly put forward the 'oasis theory' for the origins of farming in the Near East, his was one of the first in a long series of explanations which looked to environment and ecology as the cause of the shift from hunting and gathering to cultivation and animal husbandry. Pumpelly envisaged climatic desiccation at the end of the last Ice Age as the primary factor, forcing humans, plants and animals into ever closer proximity as the arid zones expanded around them. Subsequent fieldworkers took the closer investigation of environmental changes as a key aim of their research, both in the Near East and elsewhere, and this has remained a fundamental theme in theories for the emergence of agriculture. More recent advances in our understanding of environmental change have placed particular emphasis on the cold Younger Dryas episode, at the end of the last Ice Age. The impact of this sudden reversal of climate warming on the complex Natufian hunter-gatherers of the Levant may, it is argued, have forced or encouraged these communities to explore novel subsistence modes.*

*Not everybody accepts such a chain of reasoning, however, and in* The Birth of Gods and the Origins of Agriculture*, French archaeologist Jacques Cauvin rejects this emphasis on ecology and environment as the cause of change. Instead, he argues that primacy should be accorded to a restructuring of human mentality from the thirteenth to the tenth millennium* BC*, expressed in terms of new religious ideas and symbols. Cauvin's book, originally published in French in 1994 under the title* Naissance des divinités, naissance de l'agriculture*, adopts an ideological approach to explaining the Neolithic which is at odds with many traditional understandings, but which resonates closely with the idea that the Neolithic is much more than an economic transition, and coincided with a transformation in the world view of the prehistoric societies concerned. The present English translation appeared in 2000, and is based on the second French edition (1997) with the addition of a postscript summarizing relevant discoveries made since that date.*

*Owing to illness, Jacques Cauvin has been unable to contribute to this Review Feature as had been hoped, but we are fortunate that his translator, Trevor Watkins, has agreed to draft a response to the comments made by our invited reviewers. These include Ian Hodder, whose own work on the Neolithic transition has been influenced by Cauvin's research, and Ofer Bar-Yosef and Gary Rollefson, both specialists in the prehistory of the Levant. At Dr Watkins' suggestion, the introductory piece which opens the Review Feature is a translated extract from Jacques Cauvin's contribution to a similar review treatment in* Les Nouvelles de l'Archéologie *(No. 79, 2000, 49–53). As our reviewers make clear, the significance of the book, and the debate which it has initiated, will make it a key text for many years to come.*

## Ideology Before Economy

Jacques Cauvin

Institut de Préhistoire Orientale, Jalès,
07460 Berrias, France

The term 'Neolithic Revolution' was coined by Gordon Childe who emphasized as its key feature the beginnings of a productive economy based on agriculture and stock-breeding. When, with Europe in mind, he identified the Near East as the geographical origin of this process, it was primarily because only in the Near East do the wild ancestors of our modern domestic cereals grow: Near Eastern prehistory remained poorly known at that time. Despite gaps in the data, Childe also developed explanatory theories (today one would call them models) in which he attributed the new economy to a decline in resource availability resulting from an increasingly arid climate in the Near East. This model has not been confirmed by subsequent climatological data, since they do not indicate dry conditions during the period in question.

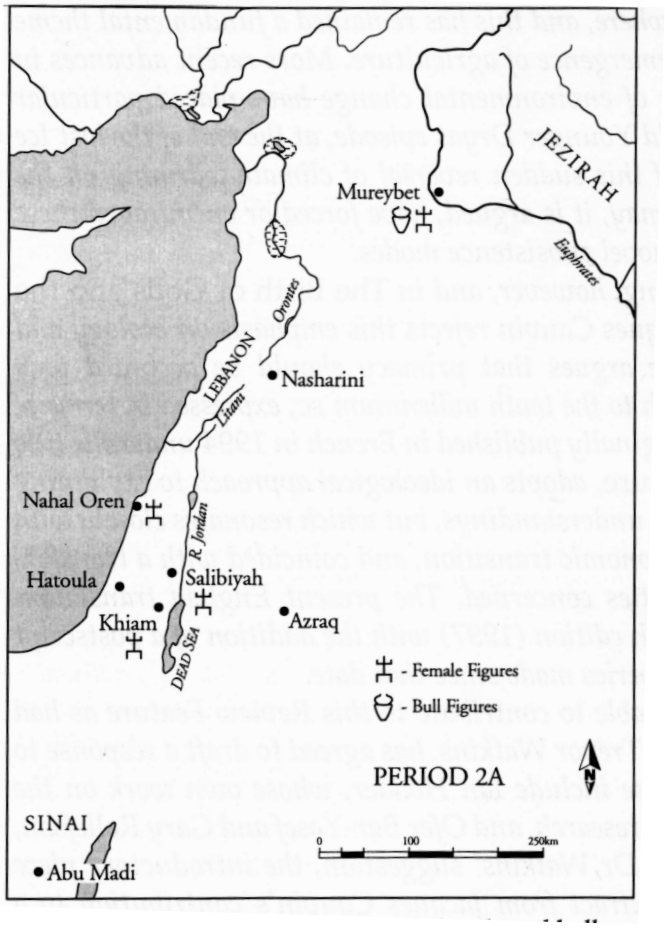


**Figure 1.** *Map of Khiamian sites with female and bull figurines, 10,000–9500 BC, 10,300–10,000 BP. (From Cauvin 2000a, fig. 4.)*

In the 1960s, Braidwood and Zohary considered the beginnings of agriculture throughout the whole of the 'nuclear zone' bordering the Fertile Crescent, from the Dead Sea to Iran, where wild cereals grow today. The first known farming villages appeared rapidly to have colonized the 'nuclear zone' up to its limits — sometimes even spreading beyond them. This was the starting point of the new American theory of 'marginal zones', associated with the names of Binford and Flannery, that appeared in about 1970. They held that the earliest Natufian cereal harvesters of the twelfth–eleventh millennia BC had pushed outwards their expanding population. At the margins of the optimal zones (the areas rich in wild cereals), those excluded would have had to invent agriculture in order artificially to re-establish their traditional food resources.

At present we know that:

1. the limit of the nuclear zone, which moved over time, originally included areas which now lie outside it;
2. only the western part of this zone, where the Natufian cultural tradition is followed by the Khiamian, currently appears to have been involved in the very early stages of agricultural origins, and
3. there are farming villages in the Levant and eastern Anatolia from the ninth millennium BC, but they are distributed throughout the whole of this nuclear zone and not only on its fringes where the chance nature of discovery had hitherto placed them.

It would be all too easy with the benefit of hindsight to criticize the notion of these margins of optimal zones. At any given moment we can only interpret the facts that we have. It should be noted, however, that the 'marginal zones' theory, like Childe's, sees the Neolithic Revolution as the result of an ecological disequilibrium between populations and resources. Such theories seek to explain inventions and their socio-cultural consequences as responses to a kind of biological need.

My own theory, by contrast, highlights the importance of cognitive factors, and the socio-cultural changes which result therefrom, as the principal motivation for the Neolithic Revolution. This is not simply a case of substituting one model for another. The first part of the approach, in an entirely Popperian

spirit (Popper 1972), consists in refuting accepted theories by showing that new findings simply do not support them. The data which had already caused the abandonment of Childe's and Binford's views have been further refined and expanded through the results of new research along the Middle Euphrates. Above all it should be noted:

1. that the beginnings of an agricultural economy fall well after the Natufian, certainly not earlier than 9000 BC. This places them within the humid Holocene period, and in a context not of scarcity but of wild resource abundance, which would have cushioned village communities from the destabilizing effects of demographic pressure;
2. more importantly, that a reordering of symbolic material, beginning in the Khiamian of the tenth millennium BC, stratigraphically preceded the emergence of an agricultural economy in the Near East in the ninth millennium. This leads us automatically to propose a cognitive change which anticipates the economic change and becomes manifest within it.

I have stated before that we are dealing here with an *agricultural economy* and not simply *agriculture*. The latter term comes more easily to mind but does not in itself give any hint of the real importance of this new technique for the subsistence of these communities. In Childe's and Binford's definitions of agriculture it is the economy as a whole that is significant, rather than isolated actions which had little overall effect on resource acquisition. It is hence the scale of the phenonemon discernible through quantitative criteria from Mureybet that lead me to propose the emergence of an early agricultural (predomestication) phase at about 9000 BC during the Mureybet culture of Euphrates prehistory.

The chronological sequence leading from cognitive transformations on the one hand, to socio-economic changes on the other, forms part of a factual realm which the prehistorian may uncover at the end of a trowel. *It is not a theory*. These new facts may appear to run counter to today's preference (among Marxists, for example) for the reverse sequence, from economy to ideology. Drawing as they did on relevant observations of nineteenth-century industrial society in which economic factors had in effect become decisive, Marx and Engels courageously applied observations concerning their own time to a distant past. This boldness was ultimately more philosophical than genuinely scientific, and has created a situation of deadlock from which research in the human sciences is only slowly awakening. Suffice it to say that the beginning of the Neolithic did not happen in this way, as theoreticians on all sides must now recognize.

The second stage of my approach acknowledges that even if the observed sequence of events is sufficient to refute certain theories, in itself it explains nothing. Is there a causal link between symbolism and economy and, if so, what is it? There is no obvious *a priori* explanation. Thus it is that the model I have proposed remains (like others) open to discussion, or even to future modification, either as a result of unexpected new discoveries or through the detection of weaknesses in my own reasoning. This second stage of the approach is nonetheless a legitimate enterprise; the purpose of theoretical discourse aims to build raw data into historical fact which supports a research focus which inevitably reflects research interests of the time. It is clear that questions are currently being asked of prehistory which relate more and more to the origin and development of our own thought processes, and over-optimistic evolutionary theory appears to have reached its limit. The theory is thus based on the coherence of the discourse, which is open to criticism, always allowing of course that account is taken of *all* the available evidence.

## Symbolism and the Origins of Agriculture in the Near East

Ian Hodder

Department of Cultural and Social Anthropology, Stanford University, Stanford, CA 94305, USA.

It is difficult to overstate the importance of Cauvin's writing for those of us who are convinced that the Neolithic was more than an economic transformation and that it had symbolic as well as material dimensions. His books in the 1970s (1972 *Religions néolithiques de Syro-Palestine* and 1978 *Les premiers villages de Syrie-Palestine de IXeme au VIIeme millenaire avant Jésus-Christ*) perhaps had less impact in the English-speaking world than they deserved, and so it is useful to have a translation (by Trevor Watkins) of Cauvin's 1994 book *Naissance des divinités, naissance de l'agriculture*, with a postscript relating to recent discoveries in the Near East. Indeed, Cauvin's ideas have only gained in importance as new data and theories have emerged. As regards new data, remarkable discoveries in eastern Anatolia and the Levant reinforce the importance of the subtitle of the

French edition of the book under review — *La révolution des symboles au Néolithique*. The new sites show that the appearance of the Neolithic in the Near East was associated with an explosion of symbolism not unlike the cultural explosion that marks the start of the Upper Palaeolithic in Europe. In the Early Neolithic of the Near East, Göbekli, Çayönü, Nevali Çori, the 'Ain Ghazal figures, and so on all demonstrate a remarkable symbolic florescence at this time. As regards new theories, a cognitive aspect of the transition has been foregrounded in the work of Donald (1991) and Renfrew & Scarre (1998), adding to previous work suggesting the importance of the social (e.g. Bender 1978) and the symbolic (Hodder 1990) dimensions. This is not to ignore the increasingly strong arguments for climatic change as a relevant factor (e.g. the special issue of *Paléorient* (23/2, 1997) devoted to palaeoenvironmental change in the Near and Middle East), but it remains possible to argue, as Cauvin does repeatedly and vigorously in the book under review, that such factors are not adequate in themselves to explain the origins of agriculture.

Given the renewed relevance of and interest in Cauvin's approach, how does he explain the role of the symbolic in the origins of agriculture? And how does his work relate to the approaches to the Neolithic with which the Anglo-American tradition is more familiar? Is the relative lack of impact partly a result of an isolation of theoretical tradition? In answering these questions, it is necessary to separate his account into two parts — that which deals with the first formation of settled villages in and prior to the PPNA around 9000 BC (calibrated), and that which deals with the later spread of the Neolithic into new environments in the PPNB and Pottery Neolithic phases between 8600 BC and 6300 BC.

**Two symbolic phases**

The argument concerning the first of these phases is neatly encapsulated in the French title of the book — the birth of agriculture is linked to the birth of divinities. In sum, the increased intervention in the environment associated with agriculture implies a human agency that is derived from envisaging the power of personal divinities. To be more specific, Cauvin sees it as very important that the 'Revolution of Symbols' occurs before the first agricultural communities. He sees the Khiamian in the Levantine core as key to this argument since it indicates 'a change in collective psychology which must have preceded and engendered all the others in the matter of the process of neolithisation' (p 23). In the Khiamian there is already a symbolism of raptors, but especially of the bull and a woman. Reading backwards from Çatalhöyük and from historical Mesopotamia and Egypt, he sees this symbolism and its later development in PPNA as centring around a Goddess flanked by a male partner in the form of a bull. The emergence of divinities in human form is not, he argues, found in the Natufian, nor in the Upper Palaeolithic. In the latter, for example, there were collections of mammoths shown in the Franco-Cantabrian cave art, but not a mammoth god. The Neolithic images are of supreme beings and they suggest a new psychology of the human being dominated by a divine personified force which looks down. The bull is seen as representing a masculine anthropomorphic god, and by confronting this, man's virility becomes productive and civilizing (p. 124). Humans thus could see themselves as separate from external reality (p. 209) and then act upon it so as to transform and domesticate. The revolution in action (the domestication of plants) results from the 'Revolution of Symbols'. The symbolic shift to the woman/bull system occurred before cattle were dominant in the middle Euphrates. The initial change was 'a purely mental development' (p. 32). Hence the title of the book: it was the birth of divinities in human form that created the agency and the alienated sense of self (p. 209) that are necessary for agriculture.

A question that many in the Anglo-American tradition would immediately ask about this first phase of Cauvin's account is 'what causes the mental shift?' Cauvin does not appear to answer this question, except for a passing reference to some group psychology of dissatisfaction (p. 65). In trying to make sense of this lack of concern with explaining the 'Revolution of Symbols' itself, it is helpful to situate Cauvin's work within a scholarly tradition. This is not easy as Cauvin takes from many sources and charts an independent line. He states clearly the traditions he rejects. For example, any form of economic determinism is shunned. He also has little time for approaches to the symbolic which concentrate on power (pp. 122–3) and on the ideological manipulation of symbols as part of hierarchies, at least partly because he sees very little evidence of hierarchy in the Early Neolithic. He also rejects structuralism (pp. 122–3).

So where does he stand? There is some reference to Braidwood's discussion of a cultural origin for agriculture, but his main influence seems to be from the Annales school, and particularly from Duby, LeGoff and Dumézil. From the medieval historians he takes the idea that the imagination is often at the

root of historical motivations. He often describes his own approach as psycho-cultural, which appears to mean that he concentrates on the unconscious behaviour expressed in material action, and that the psychology is of the group which may feel, for example, malaise or anxiety or impatience.

For many of the Annales historians, the imagination is deeply engrained within material life. Explanation accepts multiple interacting causes. At times Cauvin argues against a single cause for domestication. Rather, he sees (p. 65) a continual cycle of interactions between population size, climate, collective life, domestication, and the imagination. But through most of the book he is so concerned to react against climatic, economic, and power factors that he gets backed into the corner of arguing for a causal and chronological primacy for the psycho-cultural. The mental shift comes first and is the most important. But by so separating off the mental from all other domains it becomes impossible to explain the symbolic florescence at all. The imagination and the group psychology just changed, for no apparent reason. In this way he departs from the medieval historians he cites and unwittingly embraces a reductionist position.

Right at the end of the postscript to the book, Cauvin appears to realize that he has gone too far and he apologizes for putting too much emphasis on the symbolic at the expense of the economic. He says (p. 220) he may have overemphasized the symbolic as a strategic reaction against a pervasive and dominant economic view. Instead, the symbolic and the economic 'are simply two faces, interior and exterior, of a single revolution' (p. 220). But to accept such a dialectical position would require more than a simple resetting of the argument and a reconsideration of the data. It would require a more thorough rethinking of how the cognitive and the symbolic are engaged in the economic and the material. It would be a matter of reintegrating power, structure and resources, all perspectives which Cauvin rejects. It would be a matter of engaging in the fine-grained many-layered writing for which the Annales school is so well known.

Of course, Cauvin can argue that he is simply describing the data. The evidence suggests, he claims, that the 'Revolution of Symbols' occurred before the domestication of plants and animals. In this way perhaps it is acceptable to argue for the primacy of the mental and symbolic. The argument is, however, rather weakened by two factors. First, as Cauvin readily discusses, the process of domestication in the Near East was slow and gradual. There were certainly phases of pre-domestic agriculture. If there was indeed a continuum of ever-closer relations between people and plants it is difficult to identify one moment at which domestication occurs; there was in fact a process of increasing intensity of plant use. Second, one of the implications of Cauvin's separation of the imagination from everyday life is that he feels he can read back from historical symbols in highly complex societies. This decontextualization, with the symbols unrelated to power and relations of production, allows him to see gods and goddesses in the Neolithic. For example, in understanding the Neolithic bull cult, he draws parallels with Phoenician Baal and Hittite Hadad (p. 124). His argument rests on the identification of the Neolithic images as personified divinities, based on assumed similarities with much later and very different cultures. Certainly the Neolithic figurines and sculptures have little to suggest individual personhood. The vast majority, as in the Palaeolithic, do not have distinctive facial features. Indeed, given the superficial similarities between the Palaeolithic 'Venus' figures and the Neolithic female figurines, it is not at all clear to me why the latter should be thought of as goddesses and the earlier ones not.

Thus it appears difficult to me to argue that personified divinities emerged in the Khiamian and PPNA before the domestication of plants and animals, both because there was a long drawn-out domestication process with no clear beginning, and because the personified divinities he claims are not easily identifiable. In addition, by strategically overemphasizing the symbolic it is difficult to see what could have caused the symbolic florescence.

A very similar conclusion is reached if we move to his second phase. Cauvin treats at some length the further spread of the PPNB. He sees this as a movement of people from the middle Euphrates, sometimes integrating into local cultures, and introducing rectangular architecture, herding, and the 'skull cult' into, for example, Anatolia and the central and southern Levant between 8600 BC and 7000 BC. He then discusses a further spread of the Neolithic in the later PPNB and Pottery Neolithic between 7500 BC and 6300 BC. This is seen as a 'great exodus' of people who now move into semi-arid landscapes and into Cyprus. He describes the spread as a colonization, even messianic in tone (p. 205).

Once again, Cauvin shuns climatic, population pressure and economic explanations for these expansionist movements. For example, at Abu Hureyra he argues that, initially, domesticated goat only made up 6 per cent of the faunal remains of food animals

which suggests that goats were not domesticated because of a need to stabilize meat supplies (p. 127). So the goat domestication must have had some non-economic purpose. He sees a similar lack of evidence for population increase as an explanation for PPNB expansion. In moving towards a psycho-cultural alternative, he describes the internal cultural characteristics that made the PPNB a 'conquering culture' (p. 122). He takes various aspects of the PPNB and identifies an underlying whole. First, there is the bull cult which shows a male virility confronting and civilizing. Second, he draws into this masculine theme the symbolic prestige invested in projectile points. Third, the domestication of the goat is linked to an imagination in which virility is expressed in terms of a confrontation with animals. Fourth, the shift to the rectangular house is fitted into the same scheme, in that the rectangular is seen as more artificial, more imposed, more a conscious expression of self than the circular house form (p. 132). The cultural whole underlying the PPNB is this central involvement of the male, unlike the earlier emphasis on female figurines. And it is this virility which explains the expansionism. He talks further of the psychological character of this cultural whole — that it contained an existential malaise, an impatience that moved material progress forward (p. 205).

As with the first phase in Cauvin's account, one is bound to ask what causes this shift in culture and psychology. And again, the answer is unclear, at least to this reader. Cauvin describes deep shifts in Hegelian collective self-awareness. But there seems no way of accounting for these changes. Again the reason seems to be that Cauvin is above all concerned with demonstrating the primacy of the psycho-cultural over more materialist accounts. But he goes so far in separating off his realm that there is no possibility of explanation of change. One is left wondering whether the shift in culture and psyche is somehow inevitable — that the female-centred will become the male-centred and society will thus become aggressive, self-aware and expansionist. Cauvin, to his credit, does not make this argument. But the only possible explanation of change seems to lie in some inexorable internal logic.

Thus in both phases in Cauvin's account of the adoption and spread of farming in the Near East we see a similar pattern. The psycho-cultural is given primacy over the material and the economic. As a result it becomes difficult to explain change in the psycho-cultural realm. Another aspect of Cauvin's account that I have noted is its dependence on the symbolism in much later, and vastly more complex, historical societies in Mesopotamia and Egypt. I wish now to turn to some specific aspects of Cauvin's interpretation of the symbolism of the Neolithic in the Near East in order to start a move towards a more integrated account — indeed towards the type of integration that Cauvin suggests in the last minutes of his book — and towards a more contextual account less dependent on later historical sources.

**Interpreting the symbolism**

A carefully contextual argument in which Cauvin works through the data looking for associations and patterns is found in his discussion of the head/skull cult. He notes special treatment of the human skull in PPNA (p. 36), but this tradition becomes more elaborate in PPNB where there is separate burial, painting and plaster modelling, and display of skulls (p. 81). In relation to the Çayönü skull building he notes the evidence of a link to human blood or the sacrifice of animals (pp. 90–91). But it is the southern Levant PPNB which allows him most scope for a detailed contextual account. He shows that the skull cult has both a domestic and a public aspect, and that it is related to the veneration of the dead, or of certain dead since only some individuals have their heads removed after burial. All the plastered skulls are of adults, but both men and women were so treated.

Cauvin thus provides a specific context for this 'cult of the ancestors' (p. 93). His argument would have been helped by a fuller consideration of the central Anatolian data. He does discuss Aşıklı Höyük and Çatalhöyük, but not sites such as those in the Burdur area (Duru 1999), perhaps because they extend slightly outside his spatial frame. Nevertheless they are part of the same Anatolian traditions and could fruitfully have been included. There is much evidence, for example, for figurines with replaceable heads. At Höyücek in the seventh millennium BC a bone dowel inserted in the neck of the body allows heads to be added and removed. It may well be the case that several of the figurines at Çatalhöyük are part of this same tradition. Many of them are headless though this may sometimes be a matter of chance breakage. But in one case, in the new excavations, the broken-off head was deliberately buried with its body in a layer above a hearth as part of the abandonment process (of Building 17).

A related part of the head or skull cult may be expressed in the bucrania at Çatalhöyük. In a number of cases, plastered bull heads placed on the west walls of the main rooms at the site were removed

from the walls after the room had gone out of use or had been filled in. This retrieval of plastered animal skulls suggests parallels with plastered human skulls, and more specifically at Çatalhöyük with the retrieval of heads from human skeletons. The recent excavations at the site have discovered two instances in which skulls had been removed from recently interred bodies, with traces of cut marks resulting from the removal. The removal of heads from corpses is shown clearly in the art, and in both the excavated examples there are reasons to consider the people so treated as special. They may have been important elders or ritual leaders. The retrieval of skulls suggests an emphasis on ancestors, with animals also either representing ancestors or interceding with ancestors. There is no need to introduce 'gods' here. Certainly there is a concern with the past, with ancestors, with myth and perhaps ritual elders or shamans. But nothing is suggested beyond a domestic cult and a concern with lineage continuity.

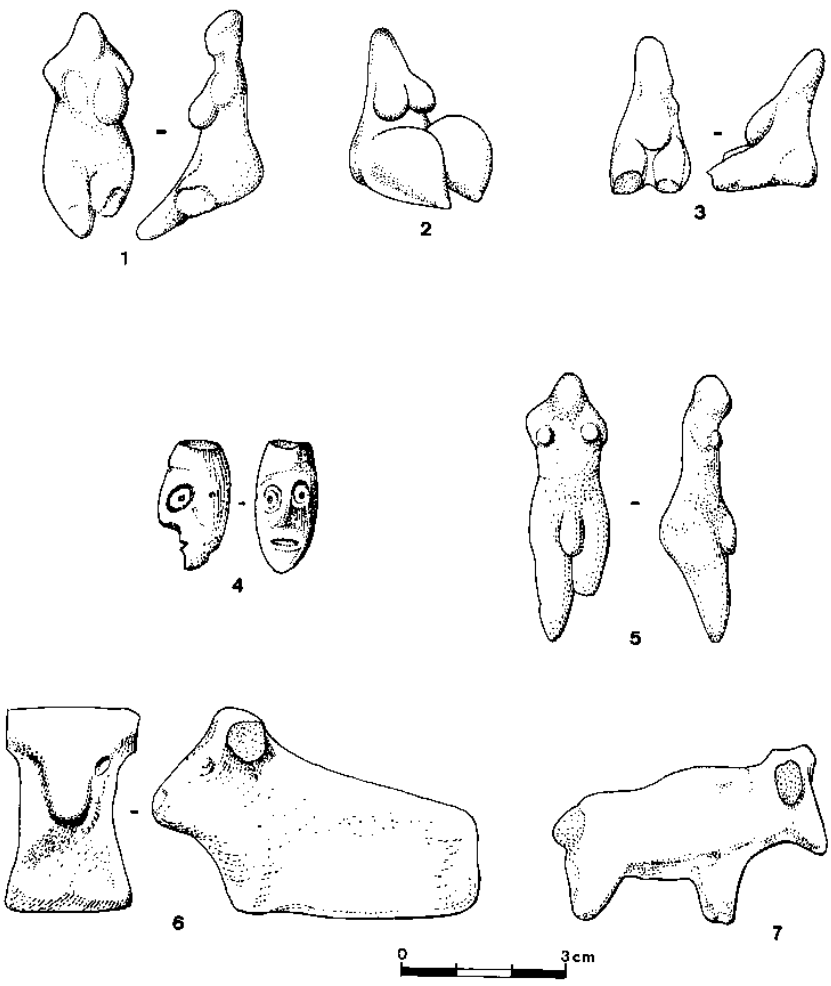


**Figure 2.** *PPNB art: baked clay female figurines from the Taurus PPNB (1 Caferhöyük; 2–3 Çayönü); male figurine from Caferhöyük (5). Bull figurines from Çayönü (6–7); stone pendant from Mureybet (Syria) in the form of a male head (4). (From Cauvin 2000a, fig. 32.)*

Another aspect of Cauvin's interpretation which I think important and contextually grounded deals with the role of gender and sexuality. We have grown accustomed to goddess and fertility ideas. Cauvin rightly, in my view, begins to break out from the Mother Goddess fertility emphasis which has dominated so much writing on Neolithic symbolism. The new evidence from Göbekli is remarkable in this regard. There are clear scenes of sexual penetration (Hauptmann 1999), and many representations of the phallus. Cauvin is surely right to re-assert the centrality of virility to the Neolithic symbolism. He notes phallic symbolism frequently in the PPNA (p. 48), and notes the appearance of more male figurines in the PPNB, sometimes with penises shown. He sees the PPNB bull as representing a masculine deity associated with the storm and the warrior and linked to a wider notion of virility as described above. This virility is interpreted as productive in that it is linked to animal domestication and to the colonization of new areas.

I think Cauvin is right to direct our attention to the presence of the male in Neolithic symbolism and to see male sexuality as a productive force. It might be useful to extend such ideas to female representations. These have largely been interpreted in terms of fertility and reproduction. The idea of the Mother Goddess has come down to contemporary scholarship from a long Germanic tradition (Meskell 1995; Hutton 1999). In fact, there are no unambiguous scenes of women giving birth or nurturing until Hacilar. It may be the case that we should consider other ways in which images of naked women may have had a symbolic role. At Çatalhöyük there is much to suggest the woman as tamer and confronter of wild animals and carnivores. It is in this role that we see her, rather than as giving birth and nurturing. (This perhaps parallels the third and second

millennium Epic of Gilgamesh, in which the sexual powers of a woman are seen domesticating the wild man Enkidu.)

Female and male sexual powers may be a central part of Neolithic symbolism. We may be able to see a complementarity between male and female sexuality, and a centrality for sexuality, rather than, or as well as, ideas to do with fertility and regeneration (the Mother Goddess). Rather than being repressed, as it is in the Judaeo-Christian and Classical traditions, sexuality seems to be an important metaphor in the Neolithic in the Near East, in much the same way as Bahrani (2001) has argued for later Mesopotamian cultures. Both male and female sexuality may have been seen as both productive and domesticating.

It is possible to contextualize the emphases on sexuality and ancestors as relevant to the formation of early settled village life. In the latter context, lineage, long-term links, production and the control of aggression would have been of central concern. Much the same can be said for the role of this symbolism in early domestication. I will not repeat the *Domestication of Europe* thesis here (Hodder 1990), but in my view it is important to pay attention to the spatial locus of much of the symbolism — that is the house in which people too are settled and domesticated. Neither should we separate the symbolism from the processes of power, and the emergence of new potentialities for the control of resources, knowledge and people. I agree with Cauvin that the cultural, symbolic and psychological are more important than has been allowed. And they emerge as an integral part of the changes we call the Neolithic. Cauvin should be congratulated for foregrounding the non-material aspects of the Neolithic. But they need to be understood as practical parts of lived reality, not as abstract ideas that just change on their own for no apparent reason.

## 2001: an Archaeological Odyssey

Gary O. Rollefson

Department of Anthropology, Whitman College, Walla Walla, WA 99362, USA.

Cauvin's impatience with processual archaeology's failure, in his view, to explain the Neolithic Revolution is patently obvious in the Introduction to his extraordinary book. To overcome the vacuum that materialistic investigations inherently possess, Cauvin offers a new approach, 'a very different theoretical option . . . without disguising the fact that it will remain to be better supported in the future' (p. 8). In short, economic pressures played no role in the development of agriculture or animal domestication. Instead, a 'cultural origin' for the Neolithic is offered, an origin whose mechanism was rooted in a new 'collective psychology' that was as unlike older Epipalaeolithic counterparts as can be imagined.

The relevant archaeological evidence that would result in 'the very foundations of our [own] culture and identity' (p. 3) are symbols, particularly figurines and other depictions with female (Mother Goddess) or male (Bull) attributes. The symbols begin to show up at around 11–12,000 years ago, revealing a 'structural system of mental imagery' (p. 23) that is associated with a religious change. The religious component of the culture, which would mature theologically over time until its brilliant florescence as the enthroned matriarch at Çatalhöyük, was also an inspiration for developing a new relationship between human society and its environment. The revolution in symbols mirrored a 'dissatisfied collective psychology' *vis à vis* a hunting and gathering way of life that had supported the society for countless millennia, ultimately leading to a 'want' to change its subsistence economy to one based on food production (p. 66). Why this dissatisfaction arose in the first place is not addressed by Cauvin, and the mysterious appearance and subsequent power of the 'Woman and Bull' motifs recalls the excavation of the Black Monolith in Stanley Kubrick's film of a science fiction thriller written by Arthur C. Clarke.

The psychological underpinnings of Cauvin's 'cultural origins' hypothesis are manifestly clear, and this raises some questions about the 'dogmatic presupposition[s] . . . in the unconscious of the observer' (p. 3) with which Cauvin accused processual archaeology. Lying at the centre of this problematic sphere is the interpretation of the symbolic portrayals. Despite the 'strictly composed unities' of cave art in Europe, for example (p. 68), archaeology 'lacks the means of interpretation' of cave art (p. 69). The simple model proposed by Cauvin to interpret Neolithic symbolism includes the assumption that upraised arms always signifies praying to a deity (pp. 69–70), and he exemplifies this with two impressive illustrations from Saharan rock art. But that same article also includes illustrations of other people with arms bent upwards at the elbows that do not appear to have any significance beyond possible greetings or simply a stylized canon of human physical portrayal (e.g. Antoniewicz 1968, pls. IV–VII).

A further example (among many other potential ones) of the psychological pitfalls associated with interpretation of symbols is that the admittedly unattractive enthroned female figurine from Çatalhöyük shows that 'birth and death are joined, readily decipherable for us who bear the "terrible mother" in the deepest strata of our unconscious' (p. 71). One has to ask here, 'Who are the "us"?'. Is it possible that we are 'confusing science with ideology' (p. 7)?

The 'Revolution of Symbols' was not a sudden eruption that resulted in a completely different lifestyle. The 'evolutionary' aspect is reflected in the long process (there's that word again) of converting the social will to the domesticable plants and animals of the landscape. The overthrow of the old regime occurred in the middle Euphrates area as well as in the central and southern Levant, although the area around Mureybet has a slightly older claim to this development. But the 'readiness' of the people would not be achieved until the emergence of a package of associated elements that revealed substantial ideological changes, including more mature religious expressions, rectangular architecture, a lithic technology associated with 'virile, prestige weaponry',[1] and agriculture; in fact, not until a new culture appeared, the PPNB.

Cauvin is emphatic that the emergence of the PPNB first occurred in the middle Euphrates, a confined geographic arena from which the unfolding of the Neolithization process proceeded outwards in a radial fashion. To the north lay Anatolia, which was 'penetrated' by groups of PPNB culture-bearers establishing themselves and their 'dominant, expansionist' culture over the local inhabitants, possibly even against their will (p. 126). The '*Drang nach Norden*' was the earliest expansion, and soon after the Neolithization of eastern Turkey the local populations developed the PPNB culture to new heights of religious achievement.

The next movement out of the PPNB heartland was towards the south, but in this case the proclaimed colonization did not require the teaching of agricultural techniques, since agriculture was already well developed in this region. Nevertheless, the local populations' lifestyles were subdued and replaced with the PPNB package that Cauvin insists developed solely in the middle Euphrates. Or did it? It is the emergence of the Early PPNB that is cited as the launching mechanism for the colonization of all parts of the Near East and beyond. Notably, since 'no site is dated earlier than 8200 BC', Cauvin concerns himself only with the Middle PPNB of the southern Levant. The disregard for at least five sites identified as Early PPNB (Gopher 1990; 1994; 1997; the last site, Horvat Galil, has at least one radiocarbon date earlier than 8300 BC) and for early sites in Jordan (Garrard *et al.* 1994; Rollefson 1996) is not easy to understand; is it possible that the middle Euphrates was not as special after all?

There is considerable discussion of symbolism in the southern Levant, and I would like to make a couple of comments that concern some misleading information. First, there is no modelled skull from 'Ain Ghazal that bears radial painting on the face (p. 114). I suspect that there has been a misidentification of an illustration of the statues excavated in 1983 (Rollefson 1983, pl. I-3). Second, two large sanctuaries have been exposed at Late PPNB 'Ain Ghazal, and although they are much younger than the cult building at Nevalı Çori, their setting is very similar (Rollefson 1998). Third, Cauvin's dismissal of the artistry of the statues as 'coarse' (p. 112) suggests another problem of potential misinterpretation based on modern standards: the discomfort he might feel towards the unnatural proportions and stylizations of the cranial features may be masking the intent of the artists who might have been required by religious canons to construct them in such a manner. And finally, Cauvin discusses conclusions about the statues, and implies that the statues from Jericho and 'Ain Ghazal were found in storage facilities (p. 112). For both of the 'Ain Ghazal caches, in any event, the statues were found intentionally buried, not stored. How the statues were curated while still in use is not known.

It is probably clear that I am not very partial to explanations of culture change that appeal to migrations of large groups of people. Despite Cauvin's claim that the 'transfer of ideas' as an explanation for culture change 'lacks concreteness' (p. 140), the transmission of economic, symbolic, technological, and architectural ideas from one social group to another seems to be a more effective explanation than invasions and conquest, especially when trade (in this case obsidian) had been characteristic of interregional communication since the Epipaleolithic period. But for Cyprus, and the steppe and oases of the Syrian and Jordanian deserts, I am in complete agreement that movements of people were necessary. And Cauvin and I share very close views of the development of pastoralism in all of its details (although I don't think that Owen Lattimore's characterization of nomads as outcasts — in Inner Asia — need be applied to the origins of the economic practice in the Levant). In fact, Cauvin's discussion closely matches a popular hypothesis developed at the beginning of

the past decade (Köhler-Rollefson 1992).

Cauvin notes that post-PPNB times (our PPNC) were not kind to the southern Levant, and that except for 'Ain Ghazal, there were virtually no settled villages in the southern Levant. This solitary status for 'Ain Ghazal is incorrect: PPNC settlements are also known at Wadi Shu'eib (Simmons *et al.* 1989), Tel 'Ali in the Jordan Valley south of the Galilee (Garfinkel 1994), and Atlit Yam (Galili *et al.* 1993; Gopher & Gophna 1993). His statement that there is no trace of *in situ* development of the Pottery Neolithic cultures is curious, since this was clearly treated in a major journal (Rollefson 1993).

In closing, I would like to point out that Cauvin's dissatisfaction with processual archaeology, and the consequent embrace of a psychological explanation, is one person's opinion. Although he does not see any environmental pressures associated with the emergence of food production, he has not provided any evidence that has refuted the processual archaeological approach.

## PPNB Interaction Sphere

Ofer Bar-Yosef

Department of Anthropology, Harvard University, Peabody Museum, 11 Divinity Avenue, Cambridge, MA 02138, USA.

The last decade witnessed extensive and intensive investigations into the origins of agriculture in the Near East. Volumes resulting from specialized and regional conferences and solicited papers were published, and a trimestrial bulletin which reports current research was founded (Aurenche & Kozlowski 1999; Bar-Yosef 1998a; Gebel *et al.* 1997; Gebel & Kozlowski 1994; Gopher 1994; Harris 1996; Kozlowski 1999; Özdogan & Basgelen 1999; *Neo-lithics* edited by H. Gebel & G. Rollefson). Among this scientific resurgence, the book by Jacques Cauvin stands out as the most creative, overarching view of the Neolithic Revolution in southwestern Asia (in 1994 and 1997, the first and second French editions, and in 2000 the English translation by T. Watkins).

Cauvin, a long-time field archaeologist, and the director of a multi-disciplinary team which intensively worked in Syria and Turkey, welds in this volume the information from the field, laboratory and actualistic studies, into a coherent story of 'how humans began to control nature'. He views the transition to agriculture as the outcome of a 'Revolution of Symbols' and not as triggered by perplexing decisions made under duress in a time of socio-economic stress. This revolution emanated from human choices within an affluent society of foragers, when 'culture was ready' (as predicted by Braidwood). It is therefore an interesting challenge to review Cauvin's reconstruction of the prehistoric sequence and discuss his cultural reasoning within the limitations of the space allowed here.

The model employed by Cauvin has the same basic premises as in the early works of Pumpelly and Childe, and it corresponds to other historically-recorded technological revolutions. It relies on the implicit assumption that a socio-economic revolution began in a core area, similar to the Industrial Revolution, and then spread by diffusion. This diffusion occurred as technical transfers or transmissions, and through population movements and intermingling with local inhabitants, or colonization of new areas. As readers will realize, however, Cauvin departs from the others by attributing the transition to agriculture to an advanced cultural state of mind that is expressed archaeologically in items of symbolic value. He therefore builds on Braidwood's early ideas — disregarding the current views of H.E. Wright (1993) — who at that time did not see any concrete field evidence for climatic change at the onset of the Neolithic Revolution.

The illustration and justification of how the cultural processes took place in the Levant, Anatolia and upper Mesopotamia, in the format of a historical narration, must be based on sound chronology. Cauvin's book employs a dendro-calibrated chronology, while avoiding the ambiguities caused by large standard deviations in the original radiocarbon dates, the 'plateaus' in the calibration curve, and the paucity of dates from certain key sites. He follows the techno-typological chronology of lithic assemblages established by the Lyon school (Aurenche *et al.* 1981).

Cauvin holds the same view as everyone else: the process of change began in the Levant with the establishment of the Natufian culture. He recognizes that sedentism is a cyclical phenomenon but leaves the Natufian case unexplained. Readers may assume that he simply does not accept any of the proposed published interpretations, some of which view the creation of the Early Natufian hamlets as the result of social decisions in face of crisis (whether climatic or social). The evolutionary importance of this culture, better known from its early phase (*c.* 12,500–10,800 BC) than the later one (*c.* 10,800–10,000 BC), is that 'it was the Natufians . . . who developed the

sociological framework within which their descendents, both biological and cultural, inaugurated new strategies . . .' (p. 20).

Cauvin names the second phase in this evolutionary trajectory as the point of commencement. The 'Revolution of Symbols' was suggested by specific Khiamian objects, which Cauvin considers a well-defined cultural horizon that dates to 10,000–9500 BC (or 10,300–10,000 bp). The figurines and bucrania in the Khiamian context at Mureybet and now also at Jerf el Ahmar mark the first appearance of 'the Woman and the Bull' images, which become the emblems of the new religion. As in the case of other new religions that in their incipient stage do not present the full array of symbols, so is the Khiamian. Hence, in order fully to understand the new cosmology, Cauvin employs the artistic expressions from Çatalhöyük (a site which represents the westward diffusion of later times) to explain its essence. The woman, a mother-goddess, was viewed as giving birth to the bull, and the two remain together the major deities during the ensuing millennia. The long-term continuity is testified by their images on Halafian pottery. This emergence of the new symbolic system signifies 'a change in collective psychology which must have preceded and engendered all the others in the matter of process of neolithisation' (p. 23).

Examining the Khiamian assemblages, it became evident to Cauvin that only in the middle Euphrates valley are the woman and the bull present, while in the southern Levant and the Taurus, the latter is missing. Hence he circumscribes the 'core area' of the Neolithic Revolution in a region where the stratigraphic continuity at Mureybet is supported by the recent discoveries at Jerf el Ahmar (Stordeur 2000a,b).

The Khiamian, in Cauvin's chronology, falls within the final centuries of the Younger Dryas. This cold and dry period, identified in the Greenland ice cores, the Mediterranean pollen cores and the detailed oxygen isotope sequence of the stalagmites of Soreq cave in Israel (Bar-Mathews *et al.* 1999; Rossignol-Strick 1995), had comprehensive effects in the Northern Hemisphere. It is in the archaeological context of this time that Hillman and Colledge (Colledge 1998) recognized the first signs of the intentional cultivation of Einkorn at the middle Euphrates sites, indicating a major change in the subsistence strategy employed by the earliest farmers. This observation is enhanced by the genetic history of wild Einkorn that points to the northern Levant as its original homeland. Contemporary sites in the eastern Taurus and Zagros foothills did not contain cereal grains, thus supporting the limited distribution of cereals during the Younger Dryas (Bar-Yosef 1998b). The author, however, sees no reason in the 'Postscript' to change his views or discuss the alternative ways in which humans dealt with such a major environmental crisis.

The development of real villages is attributed to the PPNA (*c.* 9500–8300 BC) in which three local cultures are identified: the Mureybetian in the mid-Euphrates, the Aswadian in the Damascus basin and the Sultanian in the southern Levant. Differences in stone tool-making techniques and shapes serve as the common denominator for regionalization, and it is on the same basis that the end of this period at Mureybet is determined as 8700 BC. This date becomes an additional benchmark for pinpointing the location of the 'core area'.

PPNA villages are larger than their predecessors, and their *c.* 2.5 hectares of space has been attributed by Cauvin to social agglomeration (Cauvin 1978; 2000b). In other words, villages attracted an inward movement of people and this resulted in fewer sites across the landscape. The increasing number of newly discovered PPNA sites (e.g. Gesher, Wadi Feinan 16, Jerf el Ahamar), and the continuous presence of foragers' sites in other parts of the region, reduces the significance of this proposal.

In addition, the effect of changes in human reproduction caused by sedentism, a stable diet with weaning foods, an increasing rate of female fertility, and higher investment in adolescents, is not raised by the author. Even in the ensuing chapters he refrains from attributing cultural developments to population growth, and is constantly seeking alternative motives to explain outward migrations. Ignoring the biological effects of the Neolithic Revolution and its aftermath, such as cultural-genetic co-evolution in for example the tolerance for drinking milk and digesting dairy products (Durham 1991), is perhaps the main weakness of Cauvin's book.

The weight of the evidence for the next stage is derived from Mureybet (phase III), Cheikh Hassan, Ja'ade, and Jerf el Ahmar, all within the Euphrates valley. The definition of the lithic industry is a leading argument. The shift in the core reduction strategies from uni-directional to bi-directional cores (known as 'naviform cores') facilitated the changes in arrowhead shapes. Larger and larger ones with a straight profile were made from the blades of the naviform cores. The appearance of these new types of projectiles, as well as elongated sickle blades, mark

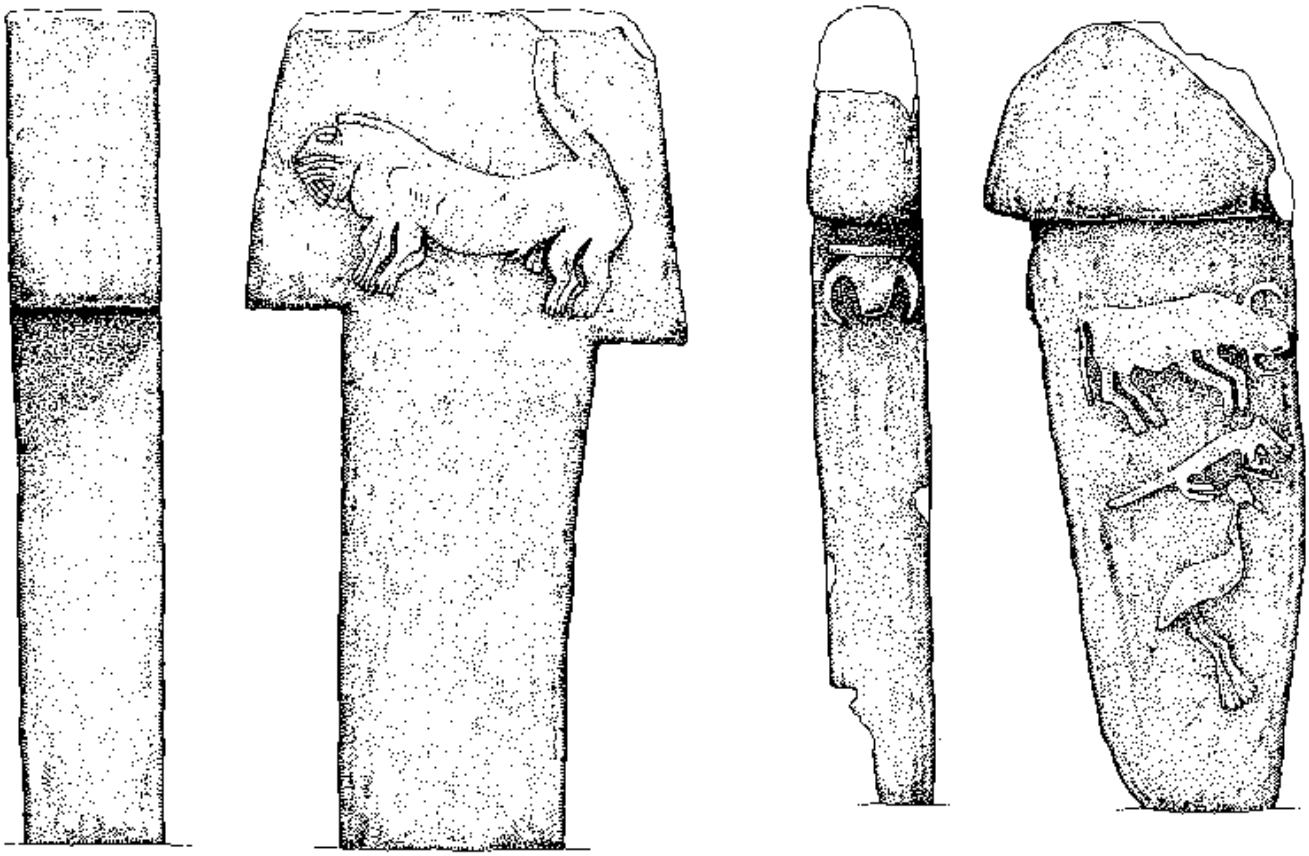

**Figure 3.** *Sculptured pillars of stone from Göbekli Tepe. (From Cauvin 2000a, fig. 70.)*

what in the southern Levant was named by Kenyon the PPNB. The radiocarbon dates from Mureybet are earlier than those in the southern Levant, but the dates from Jerf el Ahmar correspond to the PPNA of the Jordan valley. What is striking is the shift in architecture, as round houses were replaced by squarish and rectangular ones. At Jerf el Ahmar, a combination of square and oval plans occur together, encircling a central rounded building (subdivided into cells) that replicates a similar building from Mureybet (see 'Postscript'; Stordeur 2000a). Recently, another rounded central building, semi-subterranean, that resembles a 'kiva', was uncovered in this site (Stordeur 2000a).

The shift from round to rectangular architecture is seen by Cauvin as unrelated to changes in social organization. In his view, nuclear families formed the basic unit from the Natufian all through the Levantine Neolithic, an interpretation shared by Byrd (2000). The construction of above-ground rectangular buildings departs, in his interpretation, from the simple round pit-houses, and expresses a symbolic revolution by abandoning the circular image so common in the natural world, and establishing a human-made shape that signifies the appropriation of nature. It also represents a shift from the rounded female lines to the straight male ones. Houses and sanctuaries were built according to preconceived plans, with major investments in plaster floors, and as villages developed, even in adding second floors. Special 'houses of the dead' reflect a degree of centrality within each community. These revolutionary changes, according to Cauvin, are part and parcel of the rapidly flourishing PPNB culture in the core area, incorporating symbols of virility, animal domestication, elaborate weaponry, and the onset of major diffusions.

Cauvin views the cultural expressions of the PPNB in the southern Levant the work of people who migrated southward from the Euphrates valley, and were absorbed in due course by the local population. Characteristic rectangular house plans in this region, as well as new arrowhead types, are taken to reflect a 'vigorous process of acculturation' (Cauvin 2000a, 104). The unique symbolic expressions in this region are the plaster statues (Ain Ghazal,

Jericho, and Nahal Hemar cave), the modelled skulls, and the stone masks. Cauvin interprets this set of artefacts, and especially the presence of sanctuaries, as the hallmarks of an egalitarian social structure. Some of the same elements, however, could reflect a ranked society, with temporary leaders, central sacred localities such as Kfar HaHoresh and Ba'aja (Goring-Morris 2000; Gebel & Hermansen 1999), and élite members whose skulls were modelled (known as 'the cult of the ancestors').

A similar process of acculturation, according to Cauvin, caused the Neolithization of the sites beyond the core area in the Taurus valleys westward into Anatolia, and in the western Gezireh (also known as upper Mesopotamia) along the Balikh and the Khabur valleys. Discoveries such as the sanctuary in Neavali Çori and its amazing sculptures reflect a local style. Even more impressive are the buildings in Göbeki Tepe with their large T-shaped limestone pillars with bas-relief animals (Hauptmann 1999; Schmidt 1999). These indicate the symbolic, sacred value of this site. Along with others, these sites reflect a more complex social structure than a simple acephalous society of peasants.

The socio-economic map of southwest Asia at the time was varied. Hunter-gatherers continued to survive and interact with local farmers, an aspect briefly mentioned by Cauvin, regarding their possible role in the 'down-the-line' movement of prestige items such as obsidian and marine shells.

There is indeed no doubt that within the PPNB interaction sphere, a dynamic, vibrant culture developed from *c.* 8700 to 7000 BC. But the meaning of the activities of certain groups remains enigmatic. Such is the case of the colonization of Cyprus, for which the current evidence for Milouthkia and Shillourocambos indicates an average date of 8500/8400 BC (Peltenburg *et al*. 2000). The sea transport of animals such as fallow deer, goats, pigs and cattle in a seafaring craft, establishing new villages, and digging wells, required leadership and mutual agreements. The Cypriot evidence has numerous implications for our understanding of the continental assemblages. Not least of these is the recognition that morphological changes among penned and tended goats took a longer time than previously predicted (Vigne *et al.* 1999). It was perhaps not too different from the long period of cultivation of wild species before the domesticated forms became dominant in the fields. This means that we need to revise our views on animal and plant domestication and picture them as the results of a long process of human interventions. The deterministic acts of human agency become ever clearer, rendering unconscious selection obsolete as the mechanism behind the variable economic outcomes of the Neolithic Revolution.

In sum, it is an impossible task to discuss the whole range and richness and diversity of comments and interpretations offered by Jacques Cauvin. His book is one of the most thought-provoking, stimulating volumes describing and discussing the origins of agriculture in southwestern Asia. On a world scale, this is still archaeologically the best-known sequence. I can easily envisage that in the course of the next decade or two, Neolithic archaeologists will debate Cauvin's ideas and interpretations, and add and correct the observations on which his thesis was based in order to reach an improved understanding of what seems to have been the most crucial revolution of humankind after 2.5 million years of cultural evolution. Trevor Watkins should be congratulated for his successful efforts to bring Cauvin's original ideas to the English-speaking world.

## Response

Trevor Watkins

From the day that I first began to read it, I was sure Cauvin's book was one of the most important archaeology books that I would read. The main reason for undertaking the translation was that it required me to read it sentence by sentence, word by word, and several times over. I wanted to understand exactly what Jacques was saying and how he formulated his controversial theories concerning '*la naissance des divinités*' in a '*révolution des symboles*' (the latter a key phrase in the sub-title of the French editions that failed to make it into the English language edition). The draft translation was read by Jacques (who reads English with considerable facility); and finally he and I spent a happy week together working through his corrections, criticisms and questions, as well as adding the Postscript. So if the book creates problems for the reader, they are not the simple consequence of language. And I have had the opportunity to discuss with Jacques Cauvin much more than the details of the translation.

Gary Rollefson's response is heated. He begins and concludes his review with Cauvin's failure, in his view, to displace processualism as the intellectual orthodoxy which alone enables its believers to pronounce on the significance of the Neolithic Revo-

lution (let's use that term to label the transformation that was in process at the beginning of the Neolithic period in southwest Asia). Cauvin does not systematically set out the arguments that might demolish the processualist approach, Rollefson complains, nor does he properly construct an alternative theoretical approach in its place. It is not because he cannot support his own theoretical approach by more rigorous argument that Cauvin fails to write the book as Rollefson would wish. Nor, I am sure, is it because he seeks to avoid a direct confrontation with the processualist camp. I could feel as upset as Rollefson, since Cauvin (in the Conclusion) simply dismisses my contribution to the debate, along with the much more significant contribution of Ian Hodder ('This reading of history is interesting, but, for our present purpose, it does not suffice'). Yet I know from personal experience that, if my ideas were the subject of debate with Cauvin, he would criticize them systematically and surgically from a basis of thorough acquaintance with all that is in print. Cauvin has not set out to write a critique of processualism, nor to propose an alternative theoretical approach.

As Ian Hodder has noted, Cauvin's purpose is to show that the environmental-ecological hypotheses (what Kent Flannery has called 'the settlement subsistence' explanations) are insufficient in themselves to explain the adoption of farming, let alone the other associated phenomena of the end of the Epi-Palaeolithic and the beginning of the Neolithic. Cauvin argues that his chronological account of the sequence of events and phenomena shows that the processualist account of the adoption of farming is inadequate, because important psycho-cultural innovations occur first; they must in some way be causally related to the adoption of farming practices rather than the other way about. So Cauvin proposes a different kind of model that is now open to discussion, modification, and re-modelling. This time, the new model comes from outside the processualist repertoire; it does not involve human cultural responses to external pressures such as climatic and environmental deterioration or increasing human population density. And it is a model that involves internal, 'psycho-cultural' changes in the minds and cultures of certain communities.

There is another factor, I think, which makes Cauvin's ideas difficult for us to deal with. Cauvin's thinking, writing and rhetoric come from a different intellectual tradition. It is more than the fact that he refers to authorities that are unfamiliar to many of us. He employs a quite unfamiliar rhetorical style. Even when he appears to speak in English, it can be difficult for us in the anglo-phone intellectual tradition to appreciate what he is telling us, and in particular how he seeks to persuade us. It is Cauvin's *modus operandi*, as much as what he has to say, that provokes Rollefson's heated response.

Cauvin is vulnerable to Rollefson's criticism that he nowhere explains why the phenomena he describes arose at that particular time, at the pivot of the Epi-Palaeolithic with the Neolithic periods. Ian Hodder likewise draws attention to this lacuna in Cauvin's thesis. Cauvin refers approvingly and often to the question that Robert Braidwood posed when he could find no external, environmental reason why agriculture (in Braidwood's understanding of the transformation) was adopted early in the Neolithic. 'Why then, and why not earlier?' Cauvin particularly likes the fact that Braidwood's answer to his own question was that he must assume that until the Neolithic people were not culturally ready. Although Cauvin goes some way to defining the new form of cultural readiness, he leaves it unclear why that 'psycho-cultural' stage was reached at that particular moment. And the connection he envisages between the psycho-cultural, symbolic revolution and the adoption of agriculture is less than transparent. For my own part, in a book that is now in press, I seek to locate that moment in the history of the evolution of modern humans' cognitive and cultural abilities. In particular, I believe that it relates to the development of a facility to operate in terms of what Merlin Donald (1991; 1998) has called 'external symbolic storage', but where ESS consists of the symbolic use of material culture rather than written language. When I was discussing the details of the translation with Cauvin, I raised the question 'why then, why not earlier?', and described in general terms my own response, based in cognitive and evolutionary psychology. I suspect that I can see something of Cauvin's response in the piece he wrote for *Nouvelles de l'Archéologie*, in the allusion that he makes to '*un certain évolutionnisme trop optimiste*'.

Ofer Bar-Yosef would usually be thought of as a prehistorian of a processualist persuasion (for example, in Bar-Yosef & Meadow 1995), but his response to Cauvin's book is very different from Rollefson's. One area of agreement between Bar-Yosef, Cauvin and Rollefson is the notion that the seminal steps in the shift to sedentism, agriculture and herding were taken in the Mediterranean corridor, a strip of land behind the Mediterranean coastlands, stretching from the Euphrates valley in the north of Syria (where Cauvin worked on the site

of Tell Mureybet that is so important in his account) and the Jordan valley (where, of course, Bar-Yosef has excavated important evidence). Rollefson's site of 'Ain Ghazal is on the eastern margin of that Mediterranean corridor. Along with influential environmentalists and archaeo-botanists, archaeologists led by senior figures such as Cauvin, Bar-Yosef and Rollefson comprise what Watson (1995) has dubbed the 'Levantine primacy' school. Bar-Yosef shares Cauvin's understanding of the outline of culture-history, and here he links himself with Cauvin's perspective when he happily says that Cauvin 'holds the same view as everyone else: the process of change began in the Levant with the establishment of the Natufian culture'. I and a few others would argue that we need to look at a good deal broader zone than just the Mediterranean corridor; and I and a few others would also argue that we need to take a deeper chronological perspective than either Cauvin or Bar-Yosef (for example, in the light of the discoveries at earlier Epi-Palaeolithic sites in Israel such as Ohalo II (Nadel & Werker 1999) and Neve David (Kaufman 1986; 1989). This is not the place to enter into a debate on the scale of the geographical area or the depth of the time-period. Suffice to say that Cauvin would probably defend his decision to begin his story only in the late Epi-Palaeolithic period by saying that the critical stage is at the beginning of the Neolithic, and that needs to be contrasted with and derived from only the immediately preceding period.

Bar-Yosef hints at a different view of the PPNB culture from that adopted by Cauvin, referring to it as an dynamic, vibrant interaction sphere (cf. Bar-Yosef & Belfer-Cohen 1989), but Rollefson homes in on Cauvin's diffusionist difficulties with his account of the PPNB phenomenon. Bar-Yosef & Belfer-Cohen's idea of an interaction sphere deserves more elaboration, but Cauvin's diffusionist explanation of the PPNB as a new cultural impetus that is spread around the Mediterranean corridor and well beyond by means of diffusion is complex, ingenious, argued with enormous panache but ultimately unconvincing. Given Cauvin's view that the Mediterranean corridor was the core zone of innovation in the period preceding the PPNB, he can only use diffusion, whether demic diffusion involving the movement of people or stimulus diffusion involving the transmission of a cluster of technological and cultural traits, to explain the phenomenal cultural florescence in southeast Turkey, northern Iraq and south-central Turkey. How this supposed PPNB cultural expansion relates to the societies that were already in those regions is a question to which Cauvin has rather lame answers. That there was population expansion at this period has been emphatically illustrated by the recent discoveries in Cyprus, at Shillourokambos, Tenta, Mylouthkia and elsewhere, of settlements that represent the systematic colonization of the island by around 8700 BC (calibrated - 7300 BC uncalibrated). For my part, having long ago predicted that there should be earlier cultural stages in Cyprus than the Khirokitia Neolithic waiting to be discovered, I am naturally delighted by the new information that has come to light and the early radiocarbon dates that have been published. The new Cypriot colonization phenomenon, which Cauvin noted in the Postscript that he added to the English edition, poses considerable questions for Levantine prehistorians, as the comments of both Bar-Yosef and Rollefson make clear. But more importantly, I think, the new information from Cyprus emphasized the gaps in our knowledge, for example of the Mediterranean coastal zone west of the Mediterranean corridor.

Especially since Cauvin has found so little time to criticize Ian Hodder's ideas about the role of symbolism in the Neolithic, it is fascinating to read Hodder's response to Cauvin's ideas. They have both been impressed by the richness of Early Neolithic symbolism, but the routes by which they have come to their present views are so very different. The notes I made as I read Hodder's review could form the basis for a substantial article, and I find it impossible to reduce my comments to an appropriate scale. Hodder's review is most interesting, because Cauvin has provoked further ideas and extensions of his thinking. In my view, Hodder's own essay on the subject of the new symbolism of the Neolithic of southwest Asia, and in particular Çatalhöyük (at the beginning of *The Domestication of Europe*: Hodder 1990) is as open as Cauvin's account to the critical question 'what causes the mental shift?'. Since Hodder 1990, there has been a decade of publications on the human mind-brain, language and their evolution. In this very important debate about cognitive and evolutionary psychology, books like Mithen 1996 and Renfrew & Scarre 1998 have started the process of involving archaeologists and material culture in this rapidly developing multi-disciplinary field. For some years I have been thinking that the future lies in the integration of archaeology into research on cognitive evolution and the development of symbolic material culture. For me, then, it is gratifying to see that Ian Hodder, too, believes that cognitive theories need to be brought into the investigation of '*la revolution des symboles au Néolithique*'.

## Note

1. The concern with the quality of retouch that surpasses functional requirements does not necessarily reflect some social concern with perceived 'virility'. If the manufacture of Naviform blades and subsequent retouch into tools such as projectile points and knives was in the hands of craft specialists (cf. Quintero & Wilke 1995), then the extremes of non-utilitarian attention could simply have been an effective public relations ploy by early capitalists.

## References


Antoniewicz, W., 1968. Le motif de l'orant dans l'art rupestre de l'Afrique du Nord et du Sahara Central, in *La Préhistoire: Problèmes et Tendances*, eds. F. Bordes & D. de Sonneville-Bordes. Paris: Éditions du CNRS, 1–10.

Aurenche, O. & S.K. Kozlowski, 1999. *La Naissance du Néolithique au Proche Orient ou Le Paradis Perdu*. Paris: Éditions Errance.

Aurenche, O., J. Cauvin, M.C. Cauvin, L. Copeland, F. Hours & P. Sanlaville, 1981. Chronologie et organisation de l'espace dans le Proche Orient de 12,000 à 5600 avant J.C., in *Préhistoire du Levant*, eds. J. Cauvin & P. Sanlaville. Paris: CNRS, 571–8.

Bahrani, Z., 2001. *Women of Babylon: Gender and Representation in Mesopotamia.* London: Routledge.

Bar-Mathews, M., A. Ayalon, A. Kaufman & G.J. Wasserburg, 1999. The Eastern Mediterranean paleoclimate as a reflection of regional events: Soreq cave, Israel. *Earth and Planetary Science Letters* 166, 85–95.

Bar-Yosef, O., 1998a. On the nature of transitions: the Middle to Upper Palaeolithic and the Neolithic Revolution. *Cambridge Archaeological Journal* 8(2), 141–63.

Bar-Yosef, O. (ed.), 1998b. *The Transition to Agriculture in the Old World*.

Bar-Yosef, O. & A. Belfer-Cohen, 1989. The Levantine 'PPNB' interaction sphere, in *People and Culture in Change*, vol. I, ed. I. Hershkovitz, 59–72.

Bar-Yosef. O. & R.H. Meadow, 1995. The origins of agriculture in the Near East, in Price & Gebauer (eds.), 39–94.

Bender, B., 1978. Gatherer-hunter to farmer: a social perspective. *World Archaeology* 10, 203–22.

Bloch, M., 1993. *Apologie pour l'Histoire ou le métier d'historien*. Paris: Armand Colin.

Byrd, B.F., 2000. Households in transition: Neolithic social organization within Southwest Asia, in Kuijt (ed.), 63–98.

Cauvin, J., 1972. *Religions néolithiques de Syro-Palestine*. Paris.

Cauvin, J., 1978. *Les premiers villages de Syrie-Palestine de IXeme au VIIeme millenaire avant Jésus-Christ*. Lyon: Maison de l'Orient.

Cauvin, J., 1994. *Naissance des divinités, naissance de l'agriculture*. First edition. Paris: Centre National de Recherche Scientifique.

Cauvin, J., 1997. *Naissance des divinités, naissance de l'agriculture*. Second edition. Paris: Centre National de Recherche Scientifique.

Cauvin, J., 2000a. *The Birth of the Gods and the Origins of Agriculture*. Cambridge: Cambridge University Press.

Cauvin, J., 2000b. The symbolic foundations of the Neolithic Revolution in the Near East, in Kuijt (ed.), 235–51.

Colledge, S., 1998. Identifying pre-domestication cultivation using multivariate analysis, in *The Origins of Agriculture and Crop Domestication*, eds. A.B. Damania, J. Valkoun, G. Willcox & C.O. Qualset. Aleppo, Syria.

Donald, M., 1991. *Origins of the Human Mind: Three Stages in the Evolution of Culture and Cognition*. Cambridge (MA): Harvard University Press.

Donald, M., 1998. Hominid enculturation and cognitive evolution, in Renfrew & Scarre (eds.), 7–17.

Durham, W.H., 1991. *Coevolution: Genes, Culture, and Human Diversity*. Palo Alto (CA): Stanford University Press.

Duru, R., 1999. The Neolithic of the Lake District, in Özdogan & Basgelen (eds.), 165–92.

Galili, E., I. Hershkowitz, A. Gopher, M. Weinstein-Evron, O. Lernau, M. Kislev & L. Horwitz, 1993. Atlit Yam: a prehistoric site on the sea floor of the Israeli coast. *Journal of Field Archaeology* 20, 133–57.

Garfinkel, Y., 1994. The 'PPNC' flint assemblage from Tel 'Ali, in Gebel & Kozlowski (eds.), 543–62.

Garrard, A., D. Baird, S. Colledge, L. Martin & K. Wright, 1994. Prehistoric environment and settlement in the Azraq Basin: an interim report on the 1987 and 1988 excavation seasons. *Levant* 26, 73–109.

Gebel, H.G. & B.D. Hermansen, 1999. Ba'ja Neolithic Project 1999: short report on architectural findings. *Neolithics* 3, 18–21.

Gebel, H.G. & S.K. Kozlowski (eds.), 1994. *Neolithic Chipped Stone Industries of the Fertile Crescent: Proceedings of the First Workshop on PPN Chipped Lithic Industries*. Berlin: Ex oriente.

Gebel, H.G. & G.O. Rollefson (eds.). *Neo-lithics: a Newsletter of Southwest Asian Lithics Research*. Berlin: Ex oriente.

Gebel, H.G., Z. Kafafi & G.O. Rollefson (eds.), 1997. *The Prehistory of Jordan*, vol. II: Perspectives from 1997. Berlin: Ex oriente.

Gopher, A., 1990. Mujahiya, an early Pre-Pottery Neolithic B site in the Golan Heights. *Tel Aviv* 17(2), 115–43.

Gopher, A., 1994. *Arrowheads of the Neolithic Levant: a Seriation Analysis*. (American Schools of Oriental Research Dissertation Series 10.) Winona Lake (IN): Eisenbrauns.

Gopher, A., 1997. Horvat Galil – an early PPNB site in the Upper Galilee, Israel. *Tel Aviv* 24(2), 183–222.

Gopher A. & R. Gophna, 1993. Cultures of the eighth and seventh millennia BP in the Southern Levant: a review for the 1990s. *Journal of World Prehistory* 7, 297–353.

Goring-Morris, A.N., 2000. The quick and the dead: the social context of aceramic Neolithic mortuary prac-

tices as seen from Kfar Hahoresh, in Kuijt (ed.),103–36.

Harris, D.R., 1996. The origins and spread of agriculture and pastoralism in Eurasia: an overview, in *The Origins and Spread of Agriculture and Pastoralism in Eurasia*, ed. D.R. Harris. London: UCL Press, 552–73.

Hauptmann, H., 1999. The Urfa Region, in Özdogan & Basgelen (eds.), 65–86.

Hodder, I., 1990. *The Domestication of Europe*. Oxford: Blackwell.

Hutton, R., 1999. *The Triumph of the Moon*. Oxford: Oxford University Press.

Kaufman, D., 1986. A reconsideration of adaptive changes in the Levantine Epi-Palaeolithic, in *The End of the Palaeolithic in the Old World*, ed. G. Straus. Oxford, 117–28.

Kaufman, D., 1989. Observations on the geometric Kebaran: a view from Neve David, in *Investigations in South Levantine Prehistory*, eds. O. Bar-Yosef & B. Vandermeersch. Oxford, 275–86.

Köhler-Rollefson, I., 1992. A model for the development of Nomadic pastoralism on the Transjordanian plateau, in *Pastoralism in the Levant: Archaeological Materials in Anthropological Perspectives*, eds. O. Bar-Yosef & A. Khazanov. (Monographs in World Prehistory 10.) Madison (WI): Prehistory Press, 11–18.

Kozlowski, S.K., 1999. *The Eastern Wing of the Fertile Crescent: Late Prehistory of Greater Mesopotamian Lithic Industries*. (British Archaeological Reports International Series 760.) Oxford: Archaeopress.

Kuijt, I. (ed.), 2000. *Life in Neolithic Farming Communities: Social Organization, Identity, and Differentiation*. New York (NY): Plenum Press.

Meskell, L., 1995. Goddesses, Gimbutas and New Age archaeology. *Antiquity* 69, 74–86.

Mithen, S., 1996. *The Prehistory of the Mind: a Search for the Origins of Art, Religion and Science*. London: Thames & Hudson.

Nadel, D. & E. Werker, 1999. The oldest ever brush hut plant remains from Ohalo II, Jordan Valley, Israel (19,000 BP). *Antiquity* 73, 755–64.

Özdogan, M. & N. Basgelen (eds.), 1999. *Neolithic in Turkey: the Cradle of Civilization*. (New Discoveries 3.) Istanbul: Arkeoloji ve Sanat Yayinlari.

Quintero, L. & P. Wilke, 1995. Evolution and economic significance of Naviform core-and-blade technology in the southern Levant. *Paléorient* 21(1), 17–33.

Peltenburg, E., S. Colledge, P. Croft, A. Jackson, C. McCartney & M.A. Murray, 2000. Agro-pastoralist colonization of Cyprus in the 10th millennium BP: initial assessments. *Antiquity* 74, 844–53.

Popper, K.R., 1972. *Logique de la découverte scientifique*. Paris: Payot.

Popper, K.R., 1989. Le mythe du cadre de référence, in *Karl Popper et la Science d'aujourd'hui*. (Colloque de Cerisy-la Salle 1981.) Paris: Aubier, 13–44.

Price, T.D. & A.B. Gebauer (eds.), 1995. *Last Hunters, First Farmers: New Perspectives on the Prehistoric Transition to Agriculture*. Santa Fe (NM): School of American Research Press.

Renfrew, C. & C. Scarre (eds.), 1998. *Cognition and Material Culture: the Archaeology of Symbolic Storage*. (McDonald Institute Monograph Series.) Cambridge: McDonald Institute for Archaeological Research.

Rollefson, G., 1983. Ritual and ceremony at Neolithic 'Ain Ghazal (Jordan). *Paléorient* 9(2), 29–38.

Rollefson, G., 1993. The origins of the Yarmoukian at 'Ain Ghazal. *Paléorient* 19(1), 91–100.

Rollefson, G., 1996. Abu Hudhud (WHS 1008): an EPPNB settlement in the Wadi el-Hasa, Central Jordan, in *Neolithic Chipped Stone Industries of the Fertile Crescent and their Contemporaries in Adjacent Regions*, eds. S. Kozlowski & H. Gebel. Berlin: ex oriente, 159–60.

Rollefson, G., 1997. A further note on the blade:blade ratio as a Neolithic phase discriminator. *Neo-Lithics* 1/97, 20.

Rollefson, G., 1998. 'Ain Ghazal (Jordan): ritual and ceremony III. *Paléorient* 24(1), 43–58.

Rossignol-Strick, M., 1995. Sea–land correlation of pollen records in the eastern Mediterranean for the glacial-interglacial transition: biostratigraphy versus radiometric time-scale. *Quaternary Science Reviews* 14, 893–915.

Schmidt, K., 1999. Boars, ducks, and foxes — the Urfa-Project 99. *Neo-Lithics* 3, 12–15.

Simmons, A., Z. Kafafi, G. Rollefson & K. Moyer, 1989. Test excavations at Wadi Shu'eib: a major Neolithic settlement in Central Jordan. *Annual of the Department of Antiquities of Jordan* 33, 27–42.

Stordeur, D., 2000a. New discoveries in architecture and symbolism at Jerf el Ahmar (Syria), 1997–1999. *Neo-Lithics* 1/00, 1–4.

Stordeur, D., 2000b. Jerf el Ahmar: et l'émergence du Néolithique au Proche Orient, in *Premiers paysans du monde: Naissances des agricultures*, ed. J. Guilaine. (Collection des Hesperides.) Paris: Editions Errance, 31–60.

Vigne, J-D., H. Buitenhuis & S. Davis, 1999. Les premiers pas de la domestication animale à l'Ouest de l'Euphrate: Chypre et l'Anatolie Centrale. *Paléorient* 25(2), 49–62.

Watson, P.J., 1995. Explaining the transition to agriculture, in Price & Gebauer (eds.), 21–37.

Wright, H.E., Jr, 1993. Environmental determinism in Near Eastern prehistory. *Current Anthropology* 34(2), 458–69.