

The PPN 1–6 Workshops: agendas, trends and the future¹

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The PPN Workshops devoted to chipped stone industries have become something of a unique success story in pre-historic research. This is less because of their continuity and well-attended venues with high-quality presentations, and more because of the frameworks they have developed to sustain the momentum in trying to overcome the various difficulties in our research. This contribution aims to discuss openly the highlights, obstacles, and struggles through which our research family goes as well as aspects of its future. However, we cannot see our agendas, trends and future outside archaeological and other mainstream research fields; and here some critical points have been reached. For example sometimes colleagues do not have time to consult each others' publications before they submit their articles for publication, or they store immense unstudied collections on their shelves while still constantly going to the field and acquiring more. Such research-suffocating trends must become a matter of debate within the PPN worked stone family.

For both “non-lithic” colleagues working in historical periods as well as for the interested public, worked stone specialists are still a strange species, measuring stones and using strange words when describing them, the purpose of which is obscure. Sometimes, to tell the truth, our specialist debates in the past two decades prompted similar feelings, but the otherwise immense achievements recently gained in our field tell us that we must be on the right track and

about to become equal members of a research framework explaining one of the most decisive historical steps mankind took, namely that of domesticating stones, with all associated social, economic, cognitive and exchange implications.

This essay discusses the individual workshops, the research family, research traditions, the supporting frameworks, the proceedings, agendas, trends and the future of the study of Neolithic worked stone.

The workshops

Six very fruitful workshops with 26.5 days of meetings have taken place since 1993, concentrating on the analysis of Neolithic chipped stones of the Near East. All the basic information about the workshops is presented in Tables 1–4.²

From the beginning, the gatherings were planned as workshops, allowing and demanding a good proportion of hands-on presentations and discussions, as well as replicative demonstrations and their discussion. Only the last gathering in Manchester was announced as a “conference”, a title inherited from the original understanding of the failed meeting which had been planned in Jordan.³ An average of

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1 The views expressed in this contribution are subjective; they are related to my personal understanding and experiences of research and research policies in Near Eastern Neolithic worked stone analysis during the last two decades. Views refer to the general trends observed, and, of course, miss positive or negative examples outside these general trends.

2 The details of the tables are not repeated in the text, but are the subject of discussion in this contribution.

3 The reason for calling the 6th gathering a conference was because of various internal issues of Yarmouk University in Jordan. Unfortunately, the conference had to be cancelled because of non-academic concerns and constraints related to incidents in the region (mainly the al-Aqsa tunnel confrontation) and the resulting potential security problems. Ziad al-Sa'ad, then dean of the Faculty of Archaeology and Anthropology at Yarmouk University, on behalf of the co-organisers of the 6th gathering, had to inform the participants about the cancellation of the meeting. His announcement was as follows: “I regret to inform you that due to some recent developments Yarmouk University will not be able to host the 6th International Conference on Chipped and Ground Stone Industries. I deeply apologize for the inconvenience that this cancellation may cause” (by email 19th of February 2007). The major part of



Fig. 1: Workshop proceedings published to date.

40 papers and posters have been presented at each of the workshops (except for Manchester when there were 28), of which on each occasion fewer have been published in the proceedings. However, 189 articles have appeared or will appear – in the five volumes of the proceedings (Table 2).

The Berlin Workshop 1993

In 1992 Stefan K. Kozłowski approached the author about some problems he had identified in Near Eastern chipped stone analysis. It was the start of negotiations about how to improve the research situation. The idea of a (single) workshop, originally proposed by Kozłowski, was modified and became a series of workshops, because the recognised research problems appeared to be substantial and in need of longer discussion.

With the help of Hans J. Nissen, who organised the finance for the first workshop in spring 1993, the author and Kozłowski organised the first gathering in Berlin. The interest of colleagues was overwhelming, and the number of participants had to be restricted. This resulted in the participation of the leading researchers of the field and excluded the younger researchers.

the pre-organisational works for the Irbid gathering had been carried out by Zeidan Kafafi, assisted by an organising committee of various Jordanian and foreign scholars resident in Jordan. Just before the last-moment cancellation an impressive programme, which included an overwhelming number of Israeli participants, and a volume of abstracts had been prepared. This file was handed over to Elizabeth Healey in March 2007 who took over the organisation of the substitute gathering in Manchester 2008. This shift was proposed by Bill Finlayson and accepted at a meeting in Amman on 21st March 2007; participants of this meeting were Hans Georg K. Gebel, Zeidan Kafafi, Bill Finlayson, Frank Hole, Deborah Olszewski, Carole McCartney, Lisa Maher, Maysoon Nahar, Sam Smith, Elizabeth Healey and others (*Neo-Lithics* 1/07).

The gathering was planned to have two parts: in one, regional summaries were presented, and, in the other, the most important and urgent problems in terminology, taxonomy and analytical procedures were evaluated (Gebel and Kozłowski 1994; Gebel and Rollefson 1994; Rollefson *et al.* 1994). As well as lectures, panel and plenary discussions were held to try to reach a mutual understanding about future structures for cooperation. For the first time, hands-on presentations of collections were offered and were open to discussion; also Phil Wilke and Leslie Quintero replicated naviform cores for the participants.

The workshop showed that the southern Levant represented the most research-intensive area; for south-eastern Turkey, the workshop triggered, among colleagues present, initial agreements on the relative chronology of the industries. The workshop also showed that while PPNB tool kits appeared to be quite well known, there were major gaps in our knowledge of the PPNA and related industries and of the reduction strategies of cores from the PPNA to the PPNB.

There was strong agreement with regard to the need for closer co-operation, especially in the fields of the standards of analysis and terminology and the co-ordination of information exchange. The extent to which research results could not be compared became obvious, not least because they had been reached by different methods and analytical techniques. An important point made was the high cost of analysis, caused by the immense size of assemblages. Parameters, samples sizes and questions of how to choose representative samples to gain comparable results were discussed. Doubts were raised concerning analyses which produce large corpora of measured data, without solving technological and taxonomic questions. Taxonomic, technological and functional variability in research approaches was recognised, and a need was seen by several participants for these to be made explicit in order to understand the subjective backgrounds of results. As a general trend it became obvious that most participants were ready to follow concepts of lithic taxa which had governed European prehistory in Near Eastern Neolithic chipped stone research.

It was accepted that the research problems which had been identified could be approached by intense discussion in working groups which would meet between the (future) workshops. The working groups were established with the aim of compiling a Dictionary of PPN Chipped Stone Industries to be published after six years by the Maison de l'Orient, Lyon. The intention was that the working groups (i.e. sub-groups, cf. below) would prepare the modules for it. The first meeting of the working groups in fact took place at the end of the Berlin Workshop, and co-ordinators were elected for each group. As a forum for future communication between these groups, the newsletter *Neo-Lithics* was born (cf. below).

The participants left Berlin with much enthusiasm for future co-operation, a serious agreement on the publication of the workshop proceedings, and the promise of meeting each other after two years at the 2nd Workshop on PPN Chipped Lithic Industries in Warsaw, organised by S.K.



Fig. 2: Watching the replication of a naviform core by Phil Wilke at the Berlin Workshop in 1993 (the late Wolfgang Taute, standing at the right).



Fig. 4: Scene from the Berlin Workshop in 1993.



Fig. 3: Phil Wilke and Leslie Quintero at their naviform core replication at the Berlin Workshop in 1993.



Fig. 5: Marie-Claire Cauvin and Hans Georg Gebel at the Berlin Workshop in 1993.

Kozłowski and H.G. Gebel. The suggestion of holding a workshop in Istanbul or Turkey was kept in mind, and finally it was accepted that the 4th Workshop would be held there (in the event, it was shifted to Niğde, to allow visits to nearby sites and obsidian sources).

The Jalès/Warsaw Workshops in 1995

The Warsaw Workshop (Gebel 1995) was preceded by meetings of the sub-groups held at the *Institute de Préhistoire Orientale* in Jalès (Coqueugniot *et al.* 1995), where a number of informal lectures were also presented.

The sub-group meetings in Jalès were outstanding successes, and showed how the contributions for a Dictionary of PPN Neolithic Chipped Industries could be promoted; the reports of these meetings were presented at the Warsaw Workshop (Coqueugniot *et al.* 1995). The momentum gained in Jalès, however, vanished until the Venice Workshop (cf. below).

The main workshop in Warsaw (Kozłowski and Gebel 1996), had rather a conference-type of atmosphere and promoted views on and from industries outside/beyond the Fertile Crescent (Table 4). It aimed to explain and view Near Eastern Neolithic chipped stone traditions from broader geographical perspectives, including south-eastern Europe, the Turanian/Central Asian countries, and the Maghreb.

Apart from this, the main topics included discussions of taxonomic problems, the presence of EPPNB sites in the southern Levant, pre-PPN lithics traditions, specialisation in raw materials, industries and tool kits, and reports on new studies of PPN assemblages (cf. Table 1 “sections”). The final discussion or conclusion unfortunately happened outside the workshop’s scheduled programme because some presentations far over ran their allotted times. However, there was common agreement that the schedule of biennial PPN workshops left too short an interval for meaningful research and sub-group consultation, and that a triennial format would provide more chances to address lithic problems between the meetings. Acceptance was announced of the gracious invitation by the University of Rome (passed on by Isabella Caneva) to host the 3rd PPN Workshop in Rome (became Venice) in 1998.

In what follows, some general trends that became obvious during the Warsaw Workshop are reported; these were addressed on several occasions, including in the opening speech. One was the field of primary production; it was noted that technological research had gained considerable ground over the last few years; it had been increasingly accepted that primary production provided indicators of both regional and socio-economic specialisation. In addition, it had become obvious that this field provided more relative chronological

Gathering	PPNI (Berlin)	PPN2 (Warsaw/ *Jalès)	PPN3 (Venice)
Dates Durations	29 March–2 April 1993 (4.5 days)	3–7 April 1995 (*28–31st March 1995) (4.5 days + *3 days)	1–5 November 1998 (4.5 days)
1. Organisers 2. Institutions 3. Venues	1. H.G.K. Gebel and S.K. Kozłowski 2. Free University of Berlin (DFG) 3. Seminar für Vorderasiatische Altertumskunde, Free University of Berlin	1. S.K. Kozłowski and H.G.K. Gebel (*M.C. Cauvin) 2. Instytut Archeologii of Warsaw University, in collaboration with the Polish Center for Mediterranean Archaeology (*Institute de Préhistoire Orientale, Jalès) 3. Warsaw University (*Institute de Préhistoire Orientale, Jalès)	1. I. Caneva, C. Lemorini, D. Zampetti, and P. Biagi 2. Università Ca' Foscari di Venezia & Università di Roma "La Sapienza"
Organised under the title	Neolithic Chipped Stone Industries of the Fertile Crescent	Neolithic Chipped Stone Industries of the Fertile Crescent and their Contemporaries in Adjacent Regions	Beyond Tools. Reconsidering Definitions, Counting and Interpretation of Lithic Assemblages
Proceedings published/edited by	Gebel and Kozłowski (eds) 1994	Kozłowski and Gebel (eds) 1996	Caneva, Lemorini, Zampetti and Biagi (eds) 2001
Status	workshop	workshop	workshop
Replicative/ experimental presentations	yes	Warsaw: no Jalès: yes	no
Hands-on presentations/ material presentation	yes	yes	yes
Number of oral presentations (incl. posters)	39	42	44
Number of registered participants		30-35	50-55
Number of published presentations	44	39	34
Foci	Regional Summaries on Chronologies, Terminology/ Taxonomy. Setting up Cooperative Structures (Group and Panel Meetings)	Taxa Problems, Regional Foci Beyond Fertile Crescent (Central Asia, NE Africa, SE Europe)	Classification/Definitions Functional Interpretation Typological Approaches Documentation Methods/ Means
Sections	I General Contributions II Khuzestan and Central Zagros III Southeastern Turkey IV Northern Syria V Central and Southern Levant	I Taxa Discussions II EPPNB- Problems III Pre- and Post-PPN Tradition IV Specialisations in Raw materials, Industries, and Tool Kits V Industries Reconsidered/ New Industries	(General discussion on Cooperation Structures and Work Progress of the Subgroups) I The Grammar of Lithic Assemblages Ia: Technology (raw material knapping strategy tool and core curation) Ib Documentation (illustration, sampling, and recording systems) II The Functional Interpretation of Tools IIa: Trace analysis IIb Contextual Analysis (spatial distribution; excavation techniques) III Tool Classification and Comparison IIIa: Typology (theory, terminology, etc.) IIIb Chronology (seriation, cultural comparison) General Summary by Jacques Cauvin

Table 1: PPN Lithics Workshops held between 1993 and 2008.

Gathering	PPN4 (Niğde)	PPN5 (Fréjus)	PPN6 (Manchester)
Dates	2–8 June 2001	1–5 March 2004	3–5 March 2008
Durations	(3.5 days)	(4 days)	(2.5 days)
1. Organisers 2. Institutions 3. Venues	1. N. Balkan-Atlı 2. Istanbul University 3. Niğde Museum	1. L. Astruc, D. Binder, and F. Briois 2. C.N.R.S. 3. Villa Clythia, Fréjus	E. Healey, S. Campbell and O. Maeda 2. Manchester University 3. Chancellors Hotel and Conference Centre, University of Manchester
Organised under the title		Technical Systems and Near Eastern PPN Communities	Studies in Technology, Environment, Production and Society
Proceedings published/edited by	Balkan-Atlı (ed.) in Healey, Campbell and Maeda (2011)	Astruc, Binder and Briois (eds) 2007	Healey, Campbell and Maeda (eds) 2011
Status	workshop	workshop	conference
Replicative/ experimental presentations		yes	no
Hands-on presentations/ material presentation		yes	yes
Number of oral presentations (incl. posters)	38	41	28
Number of registered participants	50	c. 55	38
Number of published presentations	14	30	29
Foci	Obsidian Production and Exchange, Integrative Studies (Technical Systems), Lithic Cultural Markers	Technological Systems (Origins of Technologies, Nature and Implications of Variability, Sources and Distribution of Materials, chaîne opératoire) Site Taphonomies (Transitions, Territories)	Raw Materials and Technology, Various
Sections	I PPN Lithic Technology II Obsidian Production and Exchange III Integrative Studies of PPN Technical Systems IV PPN Lithic Cultural Markers: Spatial, Social and Symbolic	I Validity of Archaeological Interpretation II PPNA Formal Typology, Function, and Chronology (South Levant) III Evolution of PPN Technical Systems IV M-LPPNB Lithic Variability V Anatolian Obsidian VI Stocks, Hoards and Caches: Societal Implications	I PPN Predecessors (South Levant) II Context and Social Meaning III Technologies, Raw Materials and Methodology

Table 1 (cont.): PPN Lithics Workshops held between 1993 and 2008.



Fig. 6: The Cauvins and Frank Hole at the pre-workshop gathering in Jalès 1995.



Fig. 8: At the pre-workshop gathering in Jalès 1995.



Fig. 7: At the pre-workshop gathering in Jalès 1995.



Fig. 9: Opening of the Warsaw Workshop in 1995 (Stefan Karol Kozłowski in the centre).

and local/regional arguments than anticipated. Another concern dealt with morpho-typological approaches, a more conservative part of our research field, in which even new attempts to analyse the problematic classes, such as the non-formal-tools, had not abandoned traditional paths, but attribute analysis had been developed as an additional approach in order to improve our understanding of tool kits beyond type-lists. Further, it was established that more had to be done in future to evaluate the socio-economic aspects of flint production, since this is the level at which the analysis of chipped stone gains the understanding of “non-lithic” colleagues and contributes to the understanding of historical processes. Non-lithic researchers do not expect masses of graphs and figures from us, but data transformed into patterns of human behaviour and processes seen as technological history. We should not be “technocrats” isolating ourselves by our own language, rather we should make ourselves understandable by helping to explain the cognitive, social, and material economic processes and developments in the Neolithic. In just such context in 1996 (e.g. during the opening of the Warsaw Workshop) expressions such as the following were heard: “This certainly requires some steps outside the mainstream methods of lithic analysis”.

The techno-taxonomic approach, in which each greater region is considered independently as its own area

of development and interaction, had gained some attention since Berlin and Kozłowski continued to promote this new ‘old’ thinking in order to establish it as a constant research theme in Near Eastern Neolithic chipped stone research.

Otherwise, we certainly remained “measurementalists” (if not “measurementologists”), “functionalists” or “true typologists” – everybody caught up in the roots of either “Franco”– or “Anglo-Saxon” – types of approaches or their derivatives. Despite these different backgrounds, and for the benefit of our results, the workshops were considered to be an integrative agency for all.

Concern was expressed, and an appeal was made, concerning the atmosphere in which we do research. It was felt that we would not achieve satisfactory results if the atmosphere of co-operative behaviour and academic fairness became disturbed by a single, but divisive event. Co-operation was still in the initial stages, and would fail to continue and develop if strong feelings promoting one’s own national research environment, over wars of terminology or in heated debate around authorship were allowed. It was to be remembered that sub-group and workshop meetings could be confrontational if needs be for the sake of results, but they never should touch the integrity of cooperation and fairness. In such cases things need to be treated as a “family affair”. Our energies should be devoted only to the



Fig. 10: Scene at the Warsaw Workshop in 1995.



Fig. 12: At the Venice Workshop in 1998.



*Fig. 11: Scene at the Warsaw Workshop in 1995
(foreground: the late Tamar Noy).*



*Fig. 13: The Cauvins with Eric Coqueugniot at the Venice
Workshop in 1998.*

subjects which brought us together and would constantly develop friendships.

The Venice Workshop in 1998

The pleasant atmosphere of the lagoon city and its historic environment greatly supported the workshop's atmosphere which in general was very friendly, lively and discursive (Gebel 1998; Cauvin 2001). The workshop's structure allowed a general discussion about future cooperation and re-organised the sub-groups (cf. below). Like the Warsaw Workshop, the presentation of lectures moved into the centre of the gathering, a development which could not be accepted by all (e.g. Phil Wilke, who suggested that we should rely more on poster and hands-on-material discussions, to promote the discursive character of the meetings in general, rather than have formal presentations).

The lively discussion on co-operative structures was intended to be a brainstorming session on issues relating to the progress and problems among the sub-groups, possible improvements by restructuring the groups and the general problems of co-operation in the PPN chipped lithic family; because this was placed at the beginning of the workshop it directly introduced the subject of the meeting "Beyond Tools".

In an overview by the author, it was concluded that the sub-groups, born in the spirit of the 1993 Berlin Workshop, basically had not been able to establish regular patterns of interaction. As for the future structure of the sub-groups, contradictory opinions arose: some criticised the splitting into subjects, and others thought that there were too many sub-groups. For example, it was remarked that materials could only be studied within the overall framework of an entire assemblage. Others felt that we needed a better arrangement of the subjects in fewer groups. Jacques Cauvin argued much more fundamentally, stressing that chipped lithic analysis could not be done in isolation or even outside a study of the complexity of cultural systems and evolution. As for modes of co-operation, most of the discussants saw the chance to overcome at least the geographic separation of group members by using mailing lists or interactive websites for the exchange of information and discussion, a facility that was not common in 1993 when planning started. Finally, a new working group structure was agreed on (cf. below), resulting in even more sub-groups.

In the session 'Grammar of Lithic Assemblages', technology, in its broadest sense, was under consideration, and most of the contributions elaborated raw material questions, including procurement techniques. For instance Leslie Quintero emphasised that different debitage assemblages

occurred in distinct contextual situations at 'Ain Ghazal, which allowed for interpretations in behavioural terms. Another excellent contribution by Didier Binder and Nur Balkan-Atlı on the obsidian and blade technology at Kömürcü-Kalatepe underlined the need and potential of more *chaîne opératoire* approaches in our discipline, although this raised the comment by Anna Belfer-Cohen that it represented a dogmatic approach to analysis. Several contributions in this session made clear that systemic approaches were a recognised need and a welcome new trend in chipped lithic analysis, tracing and understanding an artefact by its the flow through the system of procurement, production, use and depositional stages (see below, Section "The Future").

The session 'Functional Interpretation of Tools' offered eight traceology studies, followed by five contributions devoted to contextual analysis. PPN trace-wear analysis concentrated on research of artefacts from Çayönü, Mureybet and Nahal Issaron. Among other issues, the contributions of Shoh Yamada, Nigel Goring-Morris, Avi Gopher and Taylor Perron illustrated well the basic difficulties involved in gloss studies, but it also illustrated the potential of research relating to residue and mechanical traces when products (e.g. ornaments) were included in the study. The 'Contextual Analysis' session included as many approaches as contributions, and showed the wide variability that contextual studies may have. Together with Belfer-Cohen, Goring-Morris stressed a rarely discussed aspect namely that of detailed lithic studies being used "to verify contentions of synchronic changes" among the various classes of other Neolithic products and even more to contribute to the "investigation of spheres of influence and the inter-relations of different coeval Neolithic populations". More than in Epipalaeolithic contexts with less evidence in other find classes, the widened catalogue of materials of Neolithic communities would allow the investigation of an assumed concurrence between changes in chipped lithics and those of other crafts, including architecture. Again this claim, albeit from another perspective, fitted into the general demand formulated during the workshop, i.e. that of systemic approaches.

In the section 'Tool Classification and Comparison', 14 contributions were presented in the 'Typology' (theory, terminology, etc.) session and two were given in the 'Chronology' (seriation, cultural comparison) session.

In his summary, Jacques Cauvin emphasised that more young colleagues had joined the workshop than had been the case previously, and had presented their results enthusiastically, especially in the field of functional/traceological studies which showed a promising development for both that particular field of research as well as for the workshops. Turning to the topic of the *chaîne opératoire*, Jacques Cauvin explained that a *chaîne opératoire* not only showed the details of a technological process, but was also most significant for the evaluation and understanding of cultural evolution and processes. *Chaînes opératoires* allowed basic insights into human social behaviour and the patterns of the exchange of ideas. The study of primary production had gained more importance than ever before. Functional studies that included non-formal tools should change our understanding

of tool kits. We saw new approaches in the field of typology, approaches with a more morpho-technological orientation. Cauvin also expressed an understanding of the "Big-Arrowhead" concept (Kozłowski's BAI). There were some disagreements concerning the Trialetian, but it was clear that there were two big traditions to the west and the east of the Fertile Crescent. However, a presence-absence approach was unacceptable since it did not meet the complexity of the phenomena and their evolution. A need for discussion was apparent also on the use of the chipped lithic taxon "PPNB". At the end of his statement, Jacques Cauvin turned to the topic of understanding lithics for their symbolic value; he noted that lithics were part of the thinking traditions, and their study could not be reduced to mere technological aspects. Much work had to be devoted to this aspect in the future.

In the 'Discussion and Decisions on Future Workshops', exchange re-entered one of the topics of the workshop's first day, namely the structure for the next workshop which would allow more time for the exchange of ideas and for discussion. Aside from the suggestion of Phil Wilke (cf. above), it was stressed that much more space should be reserved for younger colleagues to present their results for discussion. Kozłowski proposed 'rapporteurs' who would summarise pre-circulated contributions; Ran Barkai in a basic criticism showed his disappointment with this discussion which he had expected would have been a discussion of the conclusions of the workshops. After this and more brainstorming there was some sort of a very general agreement that the next workshop should be more "mixed" with equal shares of poster and lecture presentations, examination of materials, and discussions in working groups. A possible solution could be to have four half-days with lectures (since many have to be expected), and four half-days with posters, material, and working group discussions. A vote was taken on two possibilities for the venue for the next workshop in 2001: an invitation to Niğde in Cappadocia by Nur Balkan-Atlı, and an invitation by Zeidan Kafafi at Yarmouk University in Irbid; the majority voted for Niğde as the place for the next gathering, but Irbid with its collections and the potential for visiting Jordanian sites was considered to be a good option for the future too. By having meetings in the Near East, participants would have the chance of post-workshop excursions to the sites discussed, and also access to original material.

The Niğde Workshop in 2001⁴

The 4th Workshop on PPN Chipped Lithic Industries was held in Niğde, Cappadocia. It included visits to the obsidian sources at Kalatepe/Kömürcü, one of the Göllü Dağ flows with workshops dating from Lower Palaeolithic to the PPNB and a day-long tour through the Cappadocian countryside, to the archaeological sites of Köşk Hüyük, Tepecik, Aşıklı and Musular as well as to a number of touristic places.

Only a few papers discussed technology or typology as such. The majority of contributions dealt with the implications of the lithics in terms of raw material, function, trade,

⁴ The following report was taken from Hole 2001.



Fig. 14: Group photo of the Niğde Workshop participants in 2001.

prestige, and symbolism. Of particular interest were the discussions of lithics from recently excavated sites in Turkey, presented by a number of Turkish graduate students.

Considerable parts of the discussions were devoted to the nature and role of the *ad hoc*, expedient (or “non-Hollywood”) artefacts versus standardised or formal lithics. Although it is now well-known that the proportion of the *ad hoc* group increased through the PPN, the functional and social implications were not understood. Another discussion concerned the implications of differential quantities of flint versus obsidian in sites and, indeed, differences within contemporary contexts within a single site. It has come to be realised that the PPN in Anatolia refers to settled communities lacking agriculture, unlike the situation in the central and southern Levant. Unresolved issues included the location of the sites whose artisans worked the obsidian flows, and the systems used for transporting finished products. Use-wear analysts were coming up with a number of new and interesting results including the ability to recognise sheen on obsidian, and the (apparent) re-use of arrowheads for burins, scrapers, knives, etc. Several reports dealt with the geographic distributions of specific types of artefacts and demonstrated that some which had been thought to be restricted in geographic terms are now known to overlap, for example, the distributions of bullet and naviform cores.

The Niğde Workshop can be seen as being a turning point in comprehension. There was no explicit discussion of the tool groups that had been the focal point of many previous sessions. It appeared that there was little enthusiasm for creating and implementing a strictly formal system of classification that could be applied across the region. Rather, individuals and groups working in separate geographic

regions had reached a consensus on how to describe local occurrences and, with adequate illustrations, these could be compared to occurrences in other regions. A plea was made to illustrate the non-standardised tools so that more fruitful comparisons might be made of these along with the formal tools.

Use-wear research appeared well established, producing excellent results; traceological studies should be applied routinely. These would ultimately help us understand the relationship between lithic form and function and perhaps allow more accurate interpretation of activities at sites. Clearly more work needed to be devoted to identifying lithic sources and workshops concerned with various stages of reduction. The Niğde Workshop also made it even more clear that many of the issues that the study of lithics raised could not be resolved only by analysis of the lithics themselves. Lithics occur in a matrix of contexts with many materials, originally built by humans and degraded to various extents by human and physical processes. Also the question of whether real *in situ* contexts were present in most sites needed careful consideration.

The Workshop was dedicated to Marie-Claire Cauvin who for many months had maintained vigil at Jacques’ bedside in southern France. The workshop ended with the decision to hold the 5th Workshop in southern France.

The Fréjus Workshop in 2004⁵

The 5th Workshop on PPN Chipped Lithic Industries was held in Fréjus, Southern France in Spring 2004. Since the

5 This following report is taken from Hole 2004a; for more information, apart from the proceedings (Astruc, Binder and Briois 2007), see Coquegniot 2004; Hole 2004a; Inizan 2004.



Fig. 15: Group photo of the Fréjus Workshop participants in 2004.

venue also provided accommodation and full-board, sessions, discussions, the display of materials, demonstrations of blade technologies and meant that after-session exchanges took place continuously from breakfast through to bed-time, helped by the use of a bar. This resulted in a very efficient meeting.

The full-day formal meetings and poster presentations addressed 'Formal Typology', 'Experiments', 'Transitional Periods', 'Variability Within and Between Sites' 'Lithic Caches', 'Culture Areas' and 'Exchange and Cultural Interaction'. In his workshop report (Hole 2004), Frank Hole concentrated on issues that cut across the presented themes of the contributions. Among these issues were the origins of technology, classification/typology, the nature and implications of variability, sources and distribution of materials, the *chaîne opératoire*, site taphonomy, chronology, transitions and territory.

The Fréjus Workshop again showed that contributions had moved away from a concern with classification, and recognised a need to bring greater systematic order to analysis and publication. The most striking example of this concerns point types and their possible value in distinguishing sub-regions and periods. Questions were raised as to whether some points might be perforators and *vice versa*. It was apparent that the "boundaries" between some point types are rather fuzzy and that in some instances may reflect local raw material and idiosyncratic flaking behaviour rather than anything more substantial.

It was noted that classification had become a very detailed subject of study, yet it was based on the biological model where a specimen ages but does not change during

its life. Lithics, on the other hand, are carved from raw rock, used, sharpened, reused, broken, repaired, discarded and so on. What we find archaeologically are examples of one or more of these steps in the life of a tool, so that formal variability may be so great as to preclude strict classification.

A recurrent theme was the necessity of considering the whole operational sequence from the acquisition of raw material to the making of the tool, and finally its discard and taphonomy. The contrast was made between static typology and dynamic process, as exemplified by the reduction sequence. There is considerable intra-site and inter-site variability in the reduction of lithics and the resultant tool types; the same types are found in widely varying numbers and frequency in different sites. While these data were presented, the question of what they mean for our understanding of technological processes, or the ways that sites and periods could be characterised and compared, were not explicitly addressed. In short, what do we gain by studying a *chaîne opératoire*?

There were repeated pleas for developing a finer-grained chronology. The use of the time-worn terms PPNA and PPNB with their subdivisions, over a territory as large as half the Near East, was deemed to be excessively conservative when subdivisions, based on an array of artefacts, could be demonstrated. Chronology also implied the use of finer stratigraphic distinctions. No less problematic were the transitions from Natufian to PPNA (Khiamian), or from PPNA to PPNB and their subdivisions. When types were either present or absent, it was easy to separate layers and periods, but in sites that are truly transitional it should not be expected that all distinctive artefacts would change



Fig. 16: The organisers of the Nidže Workshop 2001 (left: Nur Balkan-Ath) and the Fréjus Workshop 2004 (right: Didier Binder) at the final discussions in Fréjus.



Fig. 18: At the Fréjus Workshop in 2004.



Fig. 17: At the Fréjus Workshop in 2004.



Fig. 19: At the Fréjus Workshop in 2004. Jacques Pelegrin demonstrating pressure blade technology.

simultaneously. Underlying many of the reports and discussions about them were questions of context and association, not only of where particular artefacts were found, but what processes led to their being where they were found.

Stefan Kozłowski announced the forthcoming publication of a book in collaboration with Olivier Aurenche, detailing sub-regions that could be defined on the basis of different types of lithic artefacts. The focus of this book was boundaries, well illustrated by the distribution of Neolithic lithics, which have been maintained throughout history. With boundaries we must also consider corridors through which material, ideas and people moved to create a vast interaction sphere.

It has become customary to seek sources of the raw materials used in sites, from obsidian to flint, greenstone, orthoquartzite, basalt, and so on. The ways in which these materials were used and their proportions are often revealing and indicate that some sites were in the path of distribution and others may have been isolated. It is also important to learn the form in which material arrived – was it raw, prepared or finished? Knowledge of the sources allows us to track routes and perhaps begin to understand why material was distributed as it was.

The symbolic implications of certain lithics became a topic of discussion in the session on caches. Were the caches placed deliberately, were they stored goods, were they meant to be drawn on regularly, or were they meant to be sealed from sight and use forever? While interpretation is always somewhat suspect, discussion made clear that context and association were critical to any interpretation.

The Manchester Workshop in 2008

The organisation of the gathering – which already was designed as a conference – had been taken over from Zeidan Kafafi and his Jordanian committee by Elizabeth Healey (cf. *Neo-Lithics* 1/07: 48–49), since it could not be held in Irbid, and to combat the danger that had then arisen that the momentum of the triennial workshops would get lost. This crisis was avoided by the efforts of Elizabeth Healey, Osamu Maeda and Stuart Campbell by holding the workshop in Manchester in the spring of 2008. The continuity problem demanded a summary of the past workshops and related initiatives and on the perspectives from the workshops, which was presented by the author at the opening of the conference. Ofer Bar-Yosef, in an introductory lecture, presented his research on late foragers/early farmers transitions in China, offering it for comparison with the Near



Fig. 20: Two of the three organisers of the Manchester Workshop in 2008 (Stuart Campbell, left, and Osamu Maeda, right).



Fig. 22: Hands-on presentation at the Manchester Workshop in 2008.



Fig. 21: Hands-on presentation at the Manchester Workshop in 2008.



Fig. 23: Seeing the museum collections during the Manchester Workshop in 2008.

Eastern trajectories. While the gathering was called a conference, its character was closer to a workshop than any of the previous ones.

The following report is based on Elizabeth Healey's workshop summary (Healey 2008). The first session of the conference was devoted to PPN Predecessors. Tobias Richter and Lisa Maher presented their recent analysis of Epipalaeolithic chipped stone industries, speaking about variability, classification and interaction in the Kebaran, Qalakan and the Nebekian in the Azraq Oasis. Deborah Olszewski presented issues of "lithic cultures" in Wadi Hasa in Jordan, while Yoshi Nishiaki discussed the assemblages at Dedeiyeh Cave. Nigel Goring-Morris challenged the conceptual frameworks of the Levantine Epipalaeolithic while Ann Pirie's paper focused on webs of integration surrounding the Epipalaeolithic site of Pınarbaşı in Anatolia. Following this four papers then concentrated on the contexts and/or social meaning of stone tools (studies by Juan José Ibáñez, Osamu Maeda, Omri Barzilai, Stuart Campbell and Elizabeth Healey). Karen Wright stressed the need to re-think the analytical division between chipped and ground stone. The following three papers dealt with raw material procurement including (Tristan Carter, Laurence Astruc, Hans Georg K. Gebel). Another focus was methodology. Michal

Birkenfeld explained the use of GIS at Kfar HaHoresh for reconstructing the location of artefacts in a given context using stratigraphic and spatial (3D) analysis. Ferran Borrell described his painstaking study of raw materials and knapping methods at Tell Halula including a distinctive method of bi-directional blade technology and discussed its wider significance. Barzilai spoke about the knapping workshop at Nahal Lavan 1021, Jacob Vardi described the use of flint side-blow blade-flakes at a Ghassulian sickle blade workshop.

A next session discussed ground stone technologies in various respects: the need for a holistic view of bead and pendant production at Domuztepe by Ellen Belcher, the likelihood of staged stone ring production through reamers at Ba'ja by Marc Hintzman, a *chaîne opératoire* for basalt pestle production at Dhra' by Philipp Rassmann and the production, use and context of cupmarks at floor level in PPNA structures by Danny Rosenberg. Carole McCartney gave a new perspective on raw material procurement and the early Neolithic assemblage from Ayia Varvara Asprokremnos. Noriyuki Shirai considered the possibility of Helwan points in Northeastern Africa and whether they were related to those in the PPNB in the Levant. Fanny Bocquentin and Omri Barzilai talked about past and present research at Beisamoun in the Hula basin, Zinovi Matskevitch discussed



Fig. 24: Group photo of the Manchester Workshop participants in 2008, taken by Osamu Maeda.

whether the lithic assemblage at Sha'ar Hagolan showed continuity from PPN to PN and whether it was *ad hoc* or specialist. Borrell explained the change in flint technology at Akarçay Tepe and its differences with the situation at Halula reflecting whether it was related to a decline in hunting.

Hands-on presentations and discussion of artefactual material included those brought by the participants to the venue as well as a visit to the Manchester Museum's Near Eastern collections. These enabled collections from Jericho, Abu Hureyra, and some of the Dorothy Garrod material from El Wad, Shukbah and other sites to be discussed.

In a final discussion, the problem of the missing Niğde proceedings was discussed. Elizabeth Healey was asked to contact Nur Balkan-Atlı offering to publish the Niğde contributions within the Manchester volume while including Nur Balkan-Atlı as the collator and editor of those papers. It was agreed to accept the invitation from Barcelona to hold the next workshop (PPN7) there in 2011. The organisers will be Miquel Molist and Ferran Borrell in collaboration with Juan José Ibáñez. Workshop participants from Israel had once again offered to host the next gathering, but this proposal was put in abeyance and the hope was expressed "that it would be one day possible to accept the offer" (Healey 2008). Hope was also expressed that the meetings would return to a workshop format rather than continue in a formal conference style. It was also requested that financial support and cheap accommodation be made available to help younger colleagues to participate.

The Manchester Workshop showed that – aside from a reduced interest in the workshops by more established researchers (perhaps because it was a 'rescue meeting') – there is a decreasing interest in chronological and taxonomic topics, and that socio-economic topics had gained ground in chipped and ground stone studies. In addition, and more than ever before, chipped lithics were stressed to be part of worked stone studies. While the previous workshops rather designed the sections and their agenda, the Manchester agenda was developed from the range of papers offered.

The family

As in the sciences, the close identification with one's own work and research creates dispositions which sometimes become problematic for research. Powerful schools and traditions in lithic research do make claims, and may react exclusively or penetratingly when new research clusters appear. It has been normal to observe such sociological sides of research during the workshops. The Dictionary of PPN Chipped Stone Industries has become 'a must' for our research family not only because it was needed archaeologically, but also for its integrative effect. Like any other normal family, we like to stick together (for the sake of the identity our research is providing for us), and have branches, cousins, alliances, etc. More of a problem are political issues which have become bothersome for our research.

Of course, workshops, which aim to promote close co-operation between specialists of chipped stone research

that are either citizens or resident foreigners of Near Eastern countries, or foreigners working abroad on chipped and other stone artefact assemblages on loan from the area, may get confronted by political events and problems. Mainly these occur when supra-regional research questions touch the Israeli, Palestinian, Jordanian, and Syrian research spheres; other such research conflicts would exist for other areas if sufficiently large research spheres had developed in them (for example in Cyprus). The breadth and complexity of problems is large and relates to access to and consultation of collections from “the other side”, individuals staying away from gatherings and the dominant participation of certain groups in gatherings, the quoting of Israeli journals, the use of political borders in distribution maps, the publication of materials from occupied territories, the publication of Arabian or Iranian materials in volumes with Israeli contributions and so on.

Being aware that Near Eastern archaeological research is heavily laden with and influenced by present-day political issues, ex oriente’s policies and supporting publishing frameworks for the workshops and other occasions (*Neo-Lithics*, the SENEPSE and the bibliotheca series) have always advocated and promoted de-politicisation of Near Eastern Neolithic research (cf. for example several editorials in *Neo-Lithics* by Hans Georg K. Gebel and Gary O. Rollefson). Among other understandings, the concept and fiction of a Near Eastern Neolithic research family was promoted, the aim of which was to create, support and maintain corporate research milieus which would allow the crossing of borders both of minds and of regions. By constantly using and promoting the “naïve” family concept of collegiality, it was and still is expected the momentum of discourse is kept within a friendly atmosphere, and to avoid research channels getting clogged. It aimed especially to lead the academic offspring out of the “national” research school constraints, by giving them a good share of the workshop floors. Although the workshops were highly successful in bringing the older and the younger generations together, and levelling much of the academic hierarchy in chipped lithic research, things other than primarily political reasons appear nowadays to bother the family. A constant withdrawal of the “silverbacks” from the workshops can be observed, so reducing their availability to assist the upcoming generation at an international level. Being caught in overwhelming and partly suffocating responsibilities and demands in accelerating field and laboratory research, publication agendas, administrative claims, conference and symposium travelling, etc. (cf. see the Editorial of *Neo-Lithics* 2/09), they hardly have time to care about international networking for the chipped lithic research’s offspring. Rather, they are trying to care for their own students in order to meet their own publication obligations, a process which again promotes “school-minded” research and careers.⁶

6 A feature of “scholarly seniority” in chipped stone research seems also to be the tendency to withdraw from the “painful” measurement and statistical works of analysis which the younger generation carries out with quite some enthusiasm; this on the other hand in recent years has much paved the way for contributions to the historical meaning of chipped or worked stone industries, emphasising

Issues that might disturb family relations demand the respect or implementation of standards (for example the use of UNESCO standards on publishing materials from excavations in occupied territories, or ex oriente publishing house banning of political borders on maps or political names in articles), such chances permanently help to maintain at least a mutual research atmosphere and exchange. We are far from consultation and sharing work on collections of “cousins” from the other side, or of having workshops in the immediate areas where we could jointly visit sites and view collections. An incident like the 2007 cancellation of the workshop in Jordan must be avoided in the future; as it created a critical situation for the momentum of the workshops (and even their very survival), and a workshop held in Israel would not allow everyone to participate, meaning that we would risk splitting the family. However, it would be politically forward-looking and tempting to risk a multi-lateral Worked Stones Group of the Western Rift Valley, paving the way for future workshops. Otherwise, we are doing well and are being realistic in taking, for the time being, the results of our fieldwork and research to neutral places, and having our discussions on them there.

From the beginning of the workshops, some cases of the violation of academic rules have come to light (ignoring informal authorship, using unpublished information and data, “forgotten” acknowledgements of informally gained information or the like), either following from the gathering or related to exchange promoted through the gatherings. Although such things are common in academic life and not specific to the PPN Workshops, we should be aware that the close, informal and trusting milieu of our meetings may create tempting substrata for such incidents.

Schools of research

More than ever, an evaluation of the influences on worked stone research by lithic research traditions and trends is necessary. But hardly any consideration of this has been undertaken in the workshops or in publications. Whereas it is necessary to reflect the scholarly traditions and political frameworks in and from which we generate our results on worked stone, mutual silence and mental faculties govern Near Eastern Neolithic worked stone research in that area. Monitoring and awareness of methodological and even ideological backgrounds is a common and accepted issue in scientific work. But it seems to create fears in our research family.

Reflecting on lithic research traditions can be dangerous and may result in misunderstandings; an incident⁷ during

lithic socio-economy and even symbolism in lithic traditions as being major sources for the understanding of historical processes.

7 In the talk “Traditions in Lithic Analysis Between Schools and Research Initiatives”, I tried to identify – also by considering research-sociological factors – the different traditions of approaches and directions in Near Eastern chipped stone analysis since the pre-1970s until 1998: classificatory, “attributive” and functionalistic approach frameworks. The various traditions in the various countries of research were discussed and analysed for their share and influence on each other. The role of analytical schools was commented on as well as the sudden revival/ introduction of techno-taxa approaches, the development and important role of the *chaîne opératoire* approaches,

the Third Workshop in Venice in 1998 illustrated this and became a personal trauma for the author of this contribution. However, the overall influence of the various schools of analysis on Near Eastern worked stone research has become much less in the last decade, and an enjoyable variety of approaches and understanding is feeding our progress. Nevertheless, much “arcane” disciplinary claims still exist – and in some parts prevail – in our research, and schools select young academics who are willing to keep their particular traditions strong. Several careers have ended or have had to be shifted for just such reasons in the last two decades. There are strong opinions in Near Eastern Neolithic chipped stone research, and this is not so different from other sections of the humanities, there are teacher–student relationships, there is “socialising” networking by leading researchers specifically to promote certain analytical methods and frameworks and ideological dispositions: all these have to be understood when reading research results. We owe the younger generation such insights so that they can find their own way.

The supporting frameworks

Originally, *ex oriente* was founded to publish the workshop proceedings, and to assist the workshops, the subgroups and their dictionary work and research. This NGO research association based since 1994 at the Institut für Vorderasiatische Archäologie of Free University of Berlin has developed much further since then, and become a publishing house, has field projects, and promotes a certain research identity (www.exorient.org).

The PPN subgroups of the 90s and the Dictionary of PPN Chipped Lithic Industries

One of the major needs of PPN chipped lithic research discussed during the Berlin Workshop was the lack of commonly accepted analytical standards and terminology. Thus, the Berlin Workshop initiated five sub-groups to prepare a Dictionary of PPN Chipped Stone Industries, each representing one of the planned dictionary modules:

- Technology Sub-group (co-ordinator: Marie-Louise Inizan).
- Non-Formal Tool Sub-group (co-ordinator: Gary O. Rollefson).
- Microliths Sub-group (coordinator: Frank Hole).
- Points/Borers Sub-group (coordinator: Avi Gopher, Marie-Claire and Jacques Cauvin).

the booming core technological studies, etc. One of the aims of the talk was reflect on the extent to which the different traditions can help in future to transfer data analysis into socioeconomically meaningful information on the Neolithic past. What was meant to be an essay for raising awareness over these aspects of our research – not claiming that these insights were right or firm – became a source of misunderstanding: two Israeli colleagues commented that these were views of an imperialistic and colonialistic provenience, and warned me in an after-talk, corridor discussion “not to lean out too much of the window in order not to get shot”. A few colleagues in the audience criticised this reaction in public, while the majority of the audience remained silent. As a protest, I declined to present the paper for publication in the proceedings, understanding that the times had not come for such an evaluation in our workshops.

- Glossy Tools Sub-group (coordinator: Patricia Anderson).

The sub-groups worked with varying success between 1994 and 1998; the most successful group was the Non-Formal Tool Sub-Group (Rollefson 1994b; Baird *et al.* 1995; Rollefson 1995; Rollefson 1997). Progress was slow, mainly because of the logistics, but also because of institutional and, more rarely, personal claims (cf. above).

Possibly because of these, but also for realistic reasons, the consensus of the Venice Workshop 1998 decided on a new sub-group structure although the new sub-groups never really got underway, and the old sub-groups lost momentum until Niğde in 2001:

- Technology Sub-group (coordinator: Lesley Quintero), intended to work closely together with the Non-Formal Tools Sub-group (coordinator: Gary O. Rollefson).
- New Milling Tools Sub-group (coordinator: Phil Wilke).
- New Technology Sub-group: Frédéric Abbès, Ran Barkai, Didier Binder, Carol McCarthy, Geraud Dera-prahamian, Bernd Müller-Neuhof, Dani Nadel, Yoshihiro Nishiaki, Leslie Quintero, Philipp Rassmann, Phil Wilke (coordinator: kept open).
- Milling Tools Sub-group: Michael Rosenberg, Hara Procopiou, Leslie Quintero, and Phil Wilke (coordinator: kept open).
- Typology (coordinator: Deborah Olszewski).
- Traceology (coordinator: Christina Lemorini).
- Documentation Standards (coordinator: Isabella Caneva).

The previous suggestions made by the Non-Formal Tool Sub-group of 1996⁸ for an interactive website was not really considered. The plan to work on a Dictionary of PPN Chipped Stone Industries, and to find and agree through

8 There had been also an attempt to prevent the failure of the working groups by the Non-Formal Tool Working Group in 1996. Under the slogan “Courage et Persévérance” (coined by Lorraine Copeland), concerns were published and a proposal was made: the Marouatte Memorandum (Gebel 1996). The issue had been raised at a meeting in Marouatte that the work of the NFT Group was starting to suffer from the lack of progress of the other subgroups on which the NFT group relied. It appeared that several of the working groups had ceased to exist as functioning committees after the Warsaw Workshop, and that this had affected the general progress of the working groups. Therefore the participants at Marouatte discussed possibilities for a reorganisation of the working modes in order to achieve the original goals of the Berlin agreements of 1993. This logistical problem of the globally dispersed researchers now was seen resolvable to a great extent by the availability of on-line internet interaction, for example a mailing list (called Forum Neo-Lithics) should be established. Following that, an interactive website consisting of four sections (technology, microwear, formal tools and non-formal tools) should be created for interactive discussion (and archiving) of the development of modules for the Dictionary of PPN Chipped Stone Industries. Each section would be coordinated by an editor who would organise the comments and suggestions directed towards particular themes. The NFT module would serve as an example/prototype for the other working groups. It was hoped that the reorganisation would stimulate a renewed dedication to the aims of a mutually acceptable approach for the description, analysis and interpretation of Neolithic chipped stone industries in the Near East.

this joint analytical standards and terminology, finally failed after the Venice Workshop. Later, the demand for the dictionary was renewed by the author at the Fréjus Workshop (Gebel 2004), but it did not find much support. Discussions re-emphasised that the dictionary should be developed online, with a position created for an editor-in-chief, but no chances were seen to attract an institution to take over this task. During the Manchester meeting, the need and idea of an online dictionary again was stressed, now under the keyword Lithic-paedia (Healey 2008); the intention that an editorial board of younger colleagues should gather for this task has not come to fruition yet.

The Dictionary of PPN Chipped Industries (concept Gebel 2004) has been under discussion since the Berlin Workshop in 1993. The notion and the goal of the dictionary was to create a flexible medium of a shared terminology and definitions helping us to facilitate communication, cooperation and comparability between the different chipped lithic research traditions. The structure of the dictionary was planned in modules or sections in which the competing definitions and understandings could also be presented. The original idea of steadily growing modules considered the following dictionary sections:

- 1) Procurement/Raw Materials
- 2) Primary Production/Technology
- 3) Secondary Production/Formal Tools
- 4) Secondary Production/Non-Formal Tools

In addition, the following sections were recognised as necessary:

- 5) Definitions of Features/Findings and Concepts (e.g. “cache”, “specialisation”, “craft”)
- 6) Field Recording Methods/Contextual Observation Standards
- 7) Common Drawing Standards
- 8) Standards of Statistical and Other Analyses
- 9) Bibliographic References/Index

Lexical entries, e.g. “cache”, “workshop”, “midden”, etc. would be included as well as the definition of terms such as “spall”, “primary crested blade”, etc. Definitions with redundant elements would be eliminated/edited during the triennial meetings, while contradictory understandings would become obvious and would trigger the necessary discussions during the main gatherings. Definitions that referred to local, temporary features and so on would be listed and would show the special meaning that a term can have in specific contexts. Controversial entries would be marked as such and remain for as long as they are discussed in the online dictionary. The language of entries could be English or French, but there is an obligation to furnish these entries with the equivalent terms of at least five other languages (Arabic, Turkish, German, Italian and Spanish; see now Abu Ghaneima 2009). Illustrative elements should accompany the entries made.

*The newsletter Neo-Lithics*⁹

The newsletter *Neo-Lithics* was originally founded during the Berlin Workshop in 1993 as a medium to facilitate the exchange of information on Neolithic chipped lithic stone research, and especially to be a forum for the working groups established during that workshop.¹⁰ The newsletter's name was suggested by Frank Hole (*Neo-Lithics. A Newsletter on Southwest Asian Lithic Research*). It was planned to appear bi-annually, and serve as a rapid publication without much technical or aesthetical investment. Between 1994 and 2009, 20 issues of *Neo-Lithics* appeared through the ex oriente publishing house (orders via www.exorient.org or ex-orient@gmx.net).

The bi-annual¹¹ *Neo-Lithics* started with five pages per issue, and today has reached 40–50 pages per issue. A major increase in quality and a rise in the subscriptions were achieved when Jürgen Baumgarten replaced the informal character of the newsletter with a professional layout and an improved quality of print in 2004. Even before this the newsletter – despite its poor technological quality – had gained a high reputation and received articles worthy of publication in peer-reviewed journals. By its third year, and especially by the collapse of the PPN Chipped Lithics Working Groups after the Venice Workshop, *Neo-Lithics* moved away from being a Newsletter on Southwest Asian Lithics Research, and increasingly published – aside from workshop and conference reports, notes and news, publication notes etc. – field reports and contributions on research topics which only partly were devoted to chipped lithics; *Neo-Lithics* had become a widely accepted periodical in Near Eastern prehistory. It publishes contributions within half a year, and is very keen to promote the younger generation of researchers.

Neo-Lithics, which has appeared since 2003 as “The Newsletter on Southwest Asian Neolithic Research”, aims to maintain its original character. With the understatement “newsletter” and with a partially journal-like character, it will try to promote its policies (helping the family's

9 The original co-editors of *Neo-Lithics* were Hans Georg K. Gebel, Stefan Karol Kozłowski and Gary O. Rollefson; Kozłowski left the editorial board in 1996. Since 1996, *Neo-Lithics* has been issued under the co-editorship of Rollefson and Gebel; managing editors were/are Gebel from 1994–2003; Jürgen Baumgarten, Berlin, from 2004–2008; and Dörte Rokitta-Krumnow and Jan Krumnow, Berlin, from 2009. *Neo-Lithics* also has an advisory board since its beginnings; it includes Ofer Bar-Yosef, Harvard University; Didier Binder, C.N.R.S., Valbonne (from 2003); Jacques and Marie-Claire Cauvin, Institut Préhistoire Orientale, Jalès (1994–2004); Frank Hole, Yale University; Marie-Louise Inizan, C.N.R.S. Paris (1994–2003); Peder Mortensen, Copenhagen University; Hans J. Nissen, Freie Universität Berlin; Mehmet Özdoğan, University of Istanbul; Danielle Stordeur, Archéorient, C.N.R.S., Jalès (from 2004).

10 In detail, the original aims of the newsletter were the following: a Notes and News section for announcements of meetings and lithic analysis projects; “brief articles to promote communication before publication in major journals”; reports and announcements from the PPN Workshops Working Groups; the distribution of the Dictionary of PPN Chipped Lithic Industries' modules and updates; news of graduate student research (including MA and PhD thesis abstracts); publication of radiocarbon dates from Near Eastern Neolithic sites, and bibliographic updates.

11 *Neo-Lithics* appeared triennially in the years 1997–2000.

Workshop/ Place	PPN1 (Berlin, 1993)	PPN2 (Warsaw/ Jalès, 1995)	PPN3 (Venice, 1998)	PPN4 (Niğde 2001)	PPN5 (Fréjus, 2004)	PPN6 (Manchester, 2008)
Published/edited by	Gebel & Kozłowski 1994	Kozłowski & Gebel 1996	Caneva, Lemorini, Zampetti & Biagi 2001	Balkan-Atlı (ed.) in Healey, Campbell and Maeda (2011)	Astruc, Binder & Briais 2007	Healey, Campbell and Maeda (2011)
Number of contributions	45	39	33	14	30	29
Number of pages	601	IV + 460	IV + 455	121	355	368
Number of figures (and plates)	270 + 16	214 + 21	206	103	187	261
Number of tables	89	52	63	24	54	53
Binding	paperback	paperback	paperback	paperback	paperback	paperback
Price	45 Euro	60 Euro	72 Euro		30 Euro	76 Euro
Publishing house	ex oriente, Berlin	ex oriente, Berlin	ex oriente, Berlin	ex oriente, Berlin	Éditions APDCA, Antibes	ex oriente, Berlin

* appearing in current volume

Table 2: Contents of the workshop proceedings.

corporate research behaviour, supporting the publications of young researchers, being a fast publishing medium, etc.) and improve its qualities and services (raising awareness of new or neglected research topics, more specialised topics and issues with a special focus, acquisition of high-quality research articles, improved illustrations, higher allowance of page numbers for important individual contributions, etc.). One of the main problems the newsletter has is in achieving a geographically balanced coverage; too many contributions focus on the Southern Levant while on-going research in, for example, Iran, the Caucasian lands, or even Turkey and Cyprus does not yet use *Neo-Lithics* as a medium of publication.

The mailing list “Neo-Lithics”

From 1996–2001, and again since 2006 a mailing list, operated by the author,¹² offers a forum of exchange for all sorts of Near Eastern Neolithic research questions, and promotes information, discussion and co-operation in Neolithic research in the Eastern Mediterranean and the Middle East, including such on worked stone research. Originally, the idea was that the mailing list would prepare for the establishment of an interactive website and to serve the work of the sub-group on the modules of the Dictionary on PPN Chipped Lithic Industries. However, the traffic on the list has remained very limited throughout the years, and mainly is restricted to announcements of new publications and – recently – the circulation of pdfs, but hardly for dialogue or discussion. Cost-free subscription to the list is possible through <https://lists.fu-berlin.de/listinfo/Neo-Lithics>; posting inquiries, information, submissions, etc. is possible by using the address Neo-Lithics@lists.fu-berlin.de.

The SENEPSE and bibliotheca publication series

While the newsletter *Neo-Lithics* was originally founded to facilitate communication between the members of Near

Eastern worked stone family, the series *Studies in Early Near Eastern Production, Subsistence, and Environment* (editors-in-chief: Hans Georg K. Gebel and Reinder Neef) was established in 1994 to host publications which have difficulty in finding publishing houses, because the number of copies sold would not reach levels of interest to a professional publisher. Since it was recognised that the volumes of the proceedings of the workshops would not be sufficient to maintain a series, the series was opened from the start to all sorts of publication on prehistoric production, subsistence, and environment in the Near East which face such a financial problem. The series basically publishes on a cost-free basis for authors/editors submitting print-ready volumes, and is sold at the normal market prices (Table 2); the calculation of the price includes 30–40% of profit, to be invested in succeeding publications. However, chances to raise funds for printing are also taken allowing ex oriente to initiate or finance other (book) projects, too. In this way, the self-supporting and independent series SENEPSE has now published 12 books in 16 years.

The same spirit and a similar concept led to the establishment of the series *bibliotheca neolithica Asiae meridionalis et occidentalis* (established in 2001; editors-in-chief: Hans Georg K. Gebel and Gary O. Rollefson); it is a forum for hosting final excavation reports of Southwest Asian Neolithic sites. Because of the delay of many final excavation reports of Near Eastern Neolithic sites, and by recognising the common problems in financing their printing, Neolithic projects were offered a basically cost-free series (provided that a ready-for-print pdf is submitted). The bibliotheca series aims to host independent sub-series (or single volumes) of final publications of Southwest Asian Neolithic sites, each following their own plans and policies of publications. It offers hardbound publication of modules, and also allows for smaller volumes of 120 pages upwards, in order to speed up publication. A major problem for our final publications is that not all contributions for a volume are submitted on time; thus the series offers publication in fascicles or modules, in order to publish what is ready (for this concept see

¹² Originally, this mailing list was founded by three German associations: ArchaeoNova e.V., ex oriente e.V., and Friends of ‘Ain Ghazal e.V. (Archaeonova *et al.* 1996), following a proposal arriving from discussions at the Marouatte meeting (Gebel 1996).

	PPN1 (Berlin)	PPN2, (Warsaw/ Jalès)	PPN3 (Venice)	PPN4* (Niğde)	PPN5 (Fréjus)	PPN6 (Manchester)	Total
General subjects of lithic research	1 (2.2%)	1 (2.6%)	2 (6.1%)		1 (3.3%)	1 (3.3%)	6 (3.2%)
Explicitly on methods	1 (2.2%)						1 (0.5%)
Supra-regional subjects (including trade)	8 (17.8%)	3 (7.7%)	1 (3.0%)	2 (15.4%)	1 (3.3%)	1 (3.3%)	16 (8.4%)
Cross-period subjects	2 (4.4%)	2 (5.1%)	2 (6.1%)		2 (6.7%)	1 (3.3%)	9 (4.7%)
Regional overviews (including overviews of aspects)	7 (15.6%)	9 (23.1%)	2 (6.1%)	1 (7.7%)	4 (13.3%)		23 (12.1%)
Experimental replicative studies	2 (4.4%)	1 (2.6%)			2 (6.7%)		5 (2.6%)
Use-wear analysis	1 (2.2%)	1 (2.6%)			1 (3.3%)		3 (1.6%)
Site industries	15 (33.3%)	7 (17.9%)	8 (24.2%)	3 (23.1%)	4 (13.3%)	5 (16.7%)	42 (22.1%)
Individual tool class(es) of site(s)	5 (11.5%)	2 (5.1%)	4 (12.1%)	3 (23.1%)	2 (6.7%)	1 (3.3%)	17 (8.9%)
Individual regional tool class(es)	2 (4.4%)		3 (9.1%)	1 (7.7%)		1 (3.3%)	7 (3.7%)
Sites' primary production		2 (5.1%)	1 (3.0%)		10 (33.3%)	1 (3.3%)	14 (7.4%)
Regional primary production					1 (3.3%)		1 (0.5%)
Explicitly ritual/symbolic, social/ economic meaning of lithics or contextual studies		1 (2.6%)	2 (6.1%)	2 (15.4%)		4 (13.3%)	9 (4.7%)
Refitting studies						1 (3.3%)	1 (0.5%)
Other and non-lithic		1 (2.6%)	4 (12.1%)			2 (6.7%)	7 (3.7%)
Quarrying raw materials/ raw materials		1 (2.6%)	1 (3.0%)		2 (6.7%)		4 (2.1%)
Ground stone industries, cupmarks		1 (2.6%)				3 (10%)	4 (2.1%)
Bead, etc. making						2 (6.7%)	2 (1.1%)
Chalcolithic industries			1 (3.0%)			1 (3.3%)	2 (1.1%)
Epipalaeolithic industries	1 (2.2%)	7 (17.9%)	2 (6.1%)	1 (7.7%)		6 (20.0%)	17 (8.9%)

Table 3: Development of subject foci (numbers and percentages of published contributions).

the “Invitation to join the Series of Final Publications on Neolithic Excavations in Southwest Asia” at the end of each bibliotheca volume). The bibliotheca series has published five volumes in seven years. Of course, this concept aims also to promote the rapid publication of stone industries.

Again, both series, like *Neo-Lithics*, have become restricted to Southern Levantine subjects and sites, a development against which the editors struggle.

The Proceedings

Up to 2010, four volumes have resulted from the workshops, incorporating some 190 articles. It can become a painful job to gather all contributions and to bring them out in a reasonable period of time. Also, after the Warsaw Workshop, the number of published articles was less than the number of papers presented at the meetings (Table 1) (a trend reversed by the Manchester Workshop); also the readiness to contribute comprehensive studies appears reduced. Of course much of this development is related to the overall burden we carry in terms of publications duties, which certainly is the result of some ‘wrong-headed’ research policies and an increase in the number of meetings, forces which sometimes lead us to invest our last energies in publishing reworked ideas and evidence rather than sitting down and doing original research on materials. Today, it has become a doubtful thing to add another gathering to colleagues’ already dense schedules, and

then later to hunt the participants to prepare their contributions for the proceedings. Editors only succeed in putting a volume together if they “nurse” an increasing number of potential authors. The fate of the Niğde volume of our proceedings in a way witnesses this development.

Table 2 presents the make-up of the actual workshops; here the four volumes that were published by 2007 (147 published submissions) are detailed:

Neolithic Chipped Stone Industries of the Fertile Crescent, edited by Hans Georg Gebel and Stefan K. Kozłowski. Appeared as Studies in Early Near Eastern Production, Subsistence, and Environment 1, 1994. Berlin, ex oriente. [ISBN 3-9804241-0-3].

Neolithic Chipped Stone Industries of the Fertile Crescent, and Their Contemporaries in Adjacent Regions, edited by Stefan K. Kozłowski and Hans Georg K. Gebel. Appeared as Studies in Early Near Eastern Production, Subsistence, and Environment 3, 1996. Berlin, ex oriente. [ISBN 3-9804241-2-X].

Beyond Tools. Redefining the PPN Lithic Assemblages of the Levant. Proceedings of the Third Workshop on PPN Chipped Lithic Industries (Ca' Foscari University of Venice, Nov. 1998), edited by Isabella Caneva, Cristina Lemorini, Daniela Zampetti and Paolo Biagi. Appeared as Studies in Early Near Eastern Production, Subsistence, and Environment 9, 2001. Berlin, ex oriente. [ISBN 3-9804241-8-9].

	PPN1 (Berlin)	PPN2 (Warsaw/ Jalès)	PPN3 (Venice)	PPN4 (Niğde)	PPN5 (Fréjus)	PPN6 (Manchester)	Totals
Near East general	5 (11.9%)	3 (8.6%)	2 (6.5%)	1 (7.1%)	1 (3.6%)	1 (3.4%)	13 (7.3%)
Cross- country comparisons	4 (9.5%)	2 (5.7%)	2 (6.5%)			2 (6.9%)	10 (5.6%)
Arabian Gulf and Peninsula							
Caucasian Countries		2 (5.7%)					2 (1.1%)
Central Asia		2 (5.7%)					2 (1.1%)
Cyprus			2 (6.5%)		2 (7.1%)	1 (3.4%)	5 (2.8%)
Egypt/Maghreb		2 (5.7%)				1 (3.4%)	3 (1.7%)
Iran	2 (4.8%)	1 (2.9%)	1 (3.2%)			1 (3.4%)	5 (2.8%)
Iraq	3 (7.1%)	3 (8.6%)	1 (3.2%)		1 (3.6%)		8 (4.5%)
Israel/ Palestine	9 (21.4%)	6 (17.1%)	9 (29.0%)	6 (42.9%)	7 (25.0%)	11 (37.9%)	48 (26.8%)
Jordan	4 (9.5%)	3 (8.6%)	2 (6.5%)	1 (7.1%)	8 (28.6%)	3 (10.3%)	21 (11.7%)
Southeastern Europe		1 (2.9%)					1 (0.6%)
Syria	8 (19.0%)	4 (11.4%)	3 (9.7%)	3 (21.4%)	5 (17.9%)	3 (10.3%)	26 (14.5%)
Turanian Countries		1 (2.9%)					1 (0.6%)
Turkey	7 (16.7%)	5 (14.3%)	9 (29.0%)	3 (21.4%)	4 (14.3%)	6 (20.7%)	34 (19.0%)
All contributions	42 (100%)	35 (100%)	31 (100%)	14 (100%)	28 (100%)	29 (100%)	179 (100%)

Table 4: Development of regional foci (number and percentages of published contributions).

Systèmes techniques et communautés du Néolithique Pré-céramique au Proche-Orient. Actes du 5^e colloque international. Fréjus 2004, edited by Laurence Astruc, Didier Binder and François Briois. Appeared in the Editions APDCA (Antibes), 2007 [ISBN 2-904-110-44-5].

Agendas and trends apparent in the meetings

Much information on the agendas and trends of the meetings is given in the workshop reports presented above and is not repeated here. Table 1 summarises the foci/claims of the workshops and lists the sections held during the workshops. The later workshops have shown more of a tendency to avoiding set section topics. While the first three workshops had a strong focus on the more general agendas, this focus appeared weaker during the last workshops. This might be related to a decreased presence of senior researchers or perhaps each workshop developed its own character, which is also related to the organisers' preferences or to the location, for example the Niğde Workshop where the majority of contributions dealt with implications of obsidian and flint in terms of raw material, function, trade, prestige, and symbolism.

When we look at Table 4 it is clear which areas of the Near East remain unknown in terms of chipped lithic technologies; this has not changed between 1993 and 2008. All individual differences in the percentages in Table 4 can be explained by "logistical" rather than systematic changes. The totals, however, clearly reflect the regions where the highest research input prevails; this undoubtedly is Israel. The figures for the Caucasian and Turanian countries, Egypt and the Maghreb, SE-Europe rather suggest that the workshops are not a forum for scholars working in these areas, while the

figures for the Arabian Gulf/Peninsula, Cyprus, Iran and Iraq indicate that, for various reasons, not much chipped lithic research is done there.

The major topics and issues as well as shifts in agendas and trends observed in the workshops can be summarised as follows (cf. also Table 3):

- 1) Supra-regional subjects have "got lost" during the workshops, and cross-regional as well as cross-period subjects remain present only at low levels. Regional overviews seem to have lost ground, too, over the years. Published experimental and use-wear studies show stable but low frequencies for all workshops, although more use-wear studies have been presented at the workshops.
- 2) Site specific industries formed a substantial part of the Berlin Workshop (33%), but became a less considered topic in the workshops that followed. Something similar can be observed at a lower frequency for the individual tool classes as a subject. An outstanding focus on primary production sites is evident in the Fréjus Workshop (33%), whereas primary production investigated on regional levels is missing as a subject; this is a critical issue.
- 3) The research intensity in the Southern Levant is evident and it is generally is not a disadvantage at all, although one might wish such favoured circumstances for all countries.
- 4) Technology or primary production was an important topic in Workshops 1-3. In the later workshops the socio-economic, cognitive, and symbolic meaning of chipped stone assemblages gained much ground as a demand for future research agendas, an issue which is not reflected in the published topics (cf. Table 3). It must

be emphasised that this type of research contributes to the understanding of the historical development behind chipped industries. This topic was replaced by chronological and taxonomic foci.

- 5) Tool kits and tool kit understanding partially replaced type and type list approaches even in the early workshops. It was suggested that types/type lists do not provide extensive insights into crafts and *ad hoc* tool use in the way that the tool kit concept does, especially since “type kits” neglect the many non-formal tools (“Non-Hollywood Tools”). Attribute analytical approaches now compete with typological approaches. With this trend, the recognition of the importance of non-formal tools was unavoidable, although possibly the tendency happened the other way round.
- 6) Instead of typological approaches, a trend to more morpho-technological oriented analysis may be observed. The Niğde Workshop did not debate the typological tool groups as much as previous meetings, and formal classification systems became more side-lined. The Fréjus workshop concentrated on the need to bring greater systematic order to analysis and publication.
- 7) Repeated requests throughout all workshops were for finer-grained chronologies in chipped stone sequences. The PPNA and PPNB and their subdivisions as culturally defined units applied to large parts of the Near East no longer meet the needs of lithic chronologies.
- 8) There also was a decent but constant plea made over the years not to distinguish too much between chipped stone and other stone industries, since many chipped stone technologies were used in other stone working. Rather there was a desire to transform the PPN Chipped Stone Workshops into Workshops on Near Eastern Neolithic and Chalcolithic Worked Stones; the most radical step in this direction was made in Manchester 2008.

The future

Among other things, our future research and workshops should not only consider concerns specific to those workshops, but must also consider some general research needs.

- 1) There are considerable gaps in final reports on chipped and especially other worked stone industries, despite the fact that more materials are steadily being excavated; this situation has to be changed. Sustainability of field research should be coordinated with the momentum of final site reports. The chipped lithic workshops have addressed, but not solved, questions of guidelines of how to sample vast chipped lithic collections from sites for basic comparable analysis and specific questions.
- 2) The competency of local young researchers and chipped/worked stone research in Arab countries and Iran needs to be improved; training and support by established (and often foreign) teachers both in- and off-field must be provided. In this respect, the recent dictionary of Abu Ghaneima (2009) is of extraordinary help and value.

- 3) Synergetic work structures have to be promoted in worked stone research, meaning that projects should share their specialists and let them work on regional levels using the material from several sites.
- 4) Abiotic resource study has to become an imperative part of each chipped/worked stone analysis, and systematic infield resource survey should be a standard for every project.
- 5) Workshops have to return to a balanced mixture of poster and lecture presentations, hands-on material discussion, replicative presentations, and in general allot more time for personal exchange and the setting up of cooperative efforts.
- 6) Workshops have to find new structures and agreements of inter-workshop cooperation particularly on the most needed issues of the research field. Co-operative structures should be established beyond existing personal cooperations.
- 7) Workshops should no longer exclude other stone working techniques and should concentrate on lithic analysis and its socio-economic contexts. While concentrating on Neolithic periods, they should consider their pre- and post-Neolithic lithic traditions.

I conclude this contribution with two concepts which I personally favour. One is embedding and linking worked stone technologies with the technological, social and cognitive systems of a site, and the other is that of regional lithic economic systems.

The first understands that each lithic artefact and lithic artefact finding may appear in up to 10 sub-systems, while it “flows” through up to eight biographical levels.¹³ Such a systemic approach allows us to consider and evaluate all aspects of a worked stone industry, especially the intangible ones. A *chaîne opératoire* approach is a part of such a systemic concept. The reservation of some scholars concerning the *chaîne opératoire* (i.e. that it is too dogmatic, cf. above) is difficult to understand. The analysis of a *chaîne opératoire* not only provides insights into the details of a technological process and the various related types of the division of labour, it is also most significant for the evaluation and understanding of cultural evolution and processes, especially for the

13 The following is based on the Socio-Economic and Cognitive System of Basta. The various (horizontal) subsystems are: Acquisition Level: A. Procurement; Consumption Level I. B. Production and Refinement; Consumption Level II. C. Processing, Use, and Re-Use; Archaeological Record Level I. D. Primary Contexts (Excavation); Archaeological Record Level II. E. Secondary and Tertiary Contexts, Extraction/Export (Excavation, Interpretation); Archaeological Record Level III. F. Non-Contexts/Missing Archaeological Records; Archaeological Record Level IV. G. Natural Deposition Contexts/Post-Depositional Disturbances; Archaeological Record Level V. H. Analysis, Publication, and Post-Excavation Fate of Ruin/Material.

The various (vertical) biographical levels are: Environmental Subsystems with the Local (1) and Regional (2) Resources and Conditions; the Exchange Subsystem with Long-Distance Resources (3); the Technological Subsystems with the Household (4), Workshop/Specialised Work (5) and Community Sectors (6); the Socio-Economic Subsystem with the Social (7) and Economic/Market (8) Means and Conditions; and the Cognitive Subsystem with the Innovation (9), Tradition/Conception/Ritual (10) Sectors.

reconstruction of human social behaviour and patterns in the exchange of ideas (Jacques Cauvin at the Venice Workshop); the *chaîne opératoire* approach is the very opposite of a dogmatic approach.

Over the history of the workshops one can observe a shift from lithic “measurementalism” to lithic “symbolism”. While this shift *per se* rightly includes some movement towards analysing the various socio-economic and cognitive backgrounds of worked stone, this shift should avoid the dangers of over-reaction. We do need the transparency of empiric data and defined parameters without which such backgrounds cannot be approached. Whatever we call it, lithic economy, lithic behavioural research, lithic ethology or lithic strategies as survival learning (Ofer Bar-Yosef, Manchester Workshop), the use of stone in the Neolithic represents the most complex management of flint by man, as it is now practised as part of the new domestication of the economies of sedentary life.

Among the first to stress the need for the concept of lithic economy were Phil Wilke and Leslie Quintero (e.g. Quintero and Wilke 1995), who have derived much support for their insights from replicative/experimental approaches. They also have emphasised that we must deal with entire lithic economic systems rather than just parts of them, such as the tool kits of chipped lithic industries. The framework of our understanding should include all contexts of mineral use, and the “decipherment” of the modes of Neolithic life with the help of lithic information must implement these new levels of interpretation that can hardly be achieved by using only traditional techno-typological and statistical methods.

Sedentary territoriality brought substantial changes to the conditions of lithic behaviour and the management of abiotic resources. Surplus factors (such as “time” and “labour force”), a fixed territoriality (concentration on a specific mineral resources, “source property”), and long-distance exchange helped to create new products and markets both within and outside a region. “Lithic identities” have begun to characterise resource areas and production sites (for example obsidian, sandstone rings, chocolate flint, but also “lithic styles”), and the mineral-rich geology of an area could promote the material culture and the importance of an area with all its social, economic and cognitive consequences (Gebel 2004b).

In terms of lithic behaviour, little energy has been invested in the understanding of Neolithic people’s permanently alert cognitive “interaction” with the stone resources of their habitats and the innovative behaviour triggered by deposits or minerals. Biological resources “react” to human manipulation, while abiotic materials don’t appear to do so. This “dead-stone understanding” of research has long hindered insights into the vital relationship that developed between sedentary humans and abiotic resources. One might mention just a few resources and minerals that became crucial for Neolithisation: layered stone deposits, exchanged exotic minerals, quality flint deposits, alluvial silt and arable soil, gravel drainages, etc. All these were the subject of an interaction dominated by the complexity of technological

experience, experiment and expertise, and certainly ideological or metaphoric interpretation.

Neolithic worked stone systems, and their social and cognitive consequences, formed the innovative milieus in which worked stones behaved as one of the driving forces and pillars of domestic life. In that sense we do deal with domesticated stone.

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