

## **Scientific Report of the ESF Exploratory Workshop**

The Humanized Mineral World: towards social and symbolic evaluation of prehistoric technologies in South-Eastern Europe, Sofia, 3-6 September 2003.

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### **EXECUTIVE SUMMARY**

Before the final meeting in Sofia the workshop had a long and careful preparatory work in which approximately one third of the participants took part. The workshop was carefully designed and the working themes and sessions discussed in a preparatory meeting (E. Montagnari, Ch. Piano, S. Bertola, E. Christmann, G. Trnka, D. Komso, B. Kavur, G. Boschian) held in Trieste, March 3-5, 2003. Ts. Tsonev, E. Montagnari, Ch. Piano prepared a joint presentation and a publication in the proceedings of the International conference: 'Entering the Past' organized by "Quantitative Methods and Computer Applications in Archaeology" held from 8 to 12<sup>th</sup> April in Vienna. Another preparatory activity was a research trip in Bulgaria, April 29 – May 8 (Anne Hauzeur, Gerhard Trnaka, A. Kunov, Ts. Tsonev) looking for obsidian outcrops in Bulgaria. The workshop was popularized to World Archaeological Congress (WAC) Executive meetings and 5<sup>th</sup> Conference of WAC held in Washington, 19-27 June. An agreement was reached between Ts. Tsonev (Junior Representative for Eastern Europe and Central Asia at WAC Council) and the WAC newly elected President Claire Smith and the officers to distribute the proceedings of the workshop through the WAC global network. During the workshop in Sofia, Prof. M. Otte, University of Liège proposed the publishing of the proceedings to be included as a separate issue of ERAUL – monograph edition of the University of Liège. All the additional costs will be covered by the University of Liège and distributed through their network.

The criteria for selecting participants in the workshop have been discussed by the convenors E. Montagnari Kokelj and Ts. Tsonev. We agreed that, at first place, we should make possible the participation of young and promising researchers from the Balkan countries. Second, we invited senior researchers from the Balkan countries and from Europe and the USA who have strong interests in the Balkan prehistory. Our understanding was that despite the sessions of the workshop were arranged according to prehistoric periods, they remain thematic in character. This allowed us to invite also researchers who presented case studies from other parts of Europe. In the preparation process the workshop was gaining an increasing popularity and as some people withdrew their participation for various reasons, more contacted us to come.

The number of participants was restricted also by the limits imposed on publication costs: the grant could cover maximum 200 pages and about 50 images (black and white). This forced us upon severe restrictions on papers submitted for publication – maximum 6 standard pages including 3 illustrations per author.

The workshop aimed to present as many views as possible on prehistoric technologies in southeastern Europe. Their range varies from post-modern, humanistic archaeology to the more traditional New Archaeology interpretations. It had a clear interdisciplinary dimension with special sessions on raw materials and use-wear analyses. As a unifying accent for all the views and themes was the promotion of GIS applications for integrating geological, archaeological, and other data and their use for mathematical modeling designed for humanistic interpretations of past human behaviour. At the opening ceremony, there was a joint presentation by Ts. Tsonev, E. Montagnari, and Ch. Piano on GIS applications in prehistory accompanied by a computer demonstration prepared and presented by Ch. Piano. It has been shown the potential of creating interactive presentations of archaeological models: risk-avoidance strategies, Mesolithic/early Neolithic transition in Trieste Karst, etc. for museum and school/university presentations.

The Palaeolithic session dealt with themes such as Lower and Middle Palaeolithic technologies and the out of Africa concept of peopling Europe (Stefanka Ivanova, the Kozarnika cave excavations, Bulgaria). It concerned the various contingency factors – mostly environmental and climatic that structure the hominid spread in Europe. It has been proposed that contingency plays part in timing and location of technological evolution different from the biological one. The common understanding was expressed that the macro-evolutionary patterns tend to disguise the variability in the technological complexity that occurs locally (early appearance of Middle Palaeolithic techniques in the Kozarnika cave). Case studies of particular technological and symbolic chains of production and ‘exchange’ from Bulgaria were presented by St. Ivanova, I. Krumov.

The hotly debated theme: the transition from Middle to Upper Palaeolithic has been presented by the earliest Gravettian in Europe (the Kozarnika cave, Bulgaria) and the early transitional industry of the Uçalsi cave, SE Turkey (S. L. Kuhn). Simple diffusionist models directed from the Near East through the Balkans could not account for the existing contemporaneous data over such a large territory. The technological and typological diversity of the early transitional industries, early Aurignacian and Gravettian shows the increasing complexity of selection and spatiation of particular lithic techniques relative to raw material supply, hunting activities, group identities, artistic gestures. J. Svoboda proposed the notion of a ‘cultural corridor’ that transmits Upper Palaeolithic elements from the Near East throughout Anatolia and the Balkans, reaching Central Europe. Ts. Tsonev and J.-G. Bordes have showed particular examples of this complex development.

Micro-wear analyses and their recent achievements in study of Palaeolithic and late prehistoric lithic materials have a special place within the themes of the workshop (M. Gurova, M. Dendarsky). A detailed knowledge on traces left from repeated activities of prehistoric people not only suggests the range and the scope of particular work doings in prehistoric settlements. Some of the particularities of micro-traces allow us to have an idea of some gender and social differences, seasonality patterns, and labour division.

The central theme of the workshop is the session on raw material supply. The Institute of Archaeology and Museum, Sofia has a long-standing tradition in studying lithic raw materials. The Institute housed a large lithoteque collected by prof. K. Kanchev (archaeologists) and prof. Nachev – geologists during the 1980-es. More than 300 flint outcrops were described in geological details in Bulgaria. Analyses on the possible origin of some stone and flint artefacts from major archaeological sites and tells have been made. These included petrographic description through thin-sections (since 1980-es more than 6000 thin-sections made) and trace-element analyses in the laboratory in Buhovo, Sofia district. A tiny part of this life-long devoted work of K. Kanchev and I. Nachev is presented at the workshop and shows the potential for future investigations. To a certain extent, their work is continued by the aid of Michel Errera, Geological and Mineralogical Department, Royal Museum of Central Africa, Brussels, where through a non-destructive method (spectroradiometry) the structure of the material of a finely polished “greenstone” axe from Institute of Archaeology and Museum, Sofia has been defined. It has been agreed upon future collaboration in building up shared collection of obsidian and other minerals used by prehistoric people. From this point of view the preliminary results delivered by A. Hauzeur (A. Hauzeur, G. Trnka, A. Kunov, Ts. Tsonev) show the initial steps of a larger research program that will continue in the next years.

The workshop turned out to be a convenient place to exchange experience with other colleagues tha work on building up raw material collections and their digitalization. Katalyn Biro, Hational History Museum, Budapest presented a web-design for showing her collection of raw materials from Hungary (built up through many seasons of field work), now housed at the National History Museum, Budapest.

The raw material session has a special relation to the next session Mesolithic/early Neolithic transition and the subsequent changes in lithic technologies. The basic ideas that stand behind these technological changes and the introduction of new ones (pottery) are the incorporation of the idea of ‘exotic’ into the local notion of ‘fertility’. The session starts with the presentation of E. Uleberg, Oslo University Museum, about the ‘strange’ attractors of Norwegian Mesolithic sites. They have exclusive supply of flints coming from Denmark, not from southern Sweden. The cultural rather than rational patterns of past human behaviour had been addressed through chaos theory. The other case study that comes from the north-western part of the Balkans – Trieste Karst Area – is presented by E. Montagnary Kokelj and Ch. Piano. A clear opposition between artefacts made of local, low-quality cherts and exotic, impoted from long distances high-quality materials is made. The hypotheses put forward concerned the relationships established between the archaeological contexts in caves connected with sacred, mystified places that reveal the growing complexity of social and gender tensions. Another case study from Western Europe (the middle Mosel valley) showed the potential of early Neolithic people to network in various domains. The great variety of archaeological materials and the systematic long-distance exchange networks evidence the non-linear social development of LBK communities. It has been shown fluctuating patterns of social, economic, and symbolic cycles of early Neolithic societies (A. Hauzeur).

The following examples from the Balkans seem to confirm the above presented lines of interpretations. The increasingly complex social and gender tensions are reflected by the high-craft production of long blades made of high-quality flints and their long-distance exchange. It has been proposed the idea of the simultaneous appearance of the tulip-like pottery and long blades in domestic contexts – settlements. In cave-sites

the pottery preserves its form but appears with less ornamentation and painted motifs at the expense of occurrence of more 'exotic', 'special' artefacts: long blades made of high-quality imported flints, axes, points. The main idea is the incorporation of 'exotic' into the local notion of 'fertility' as male symbolic transgression into a traditionally female maintained domain (Ts. Tsonev).

The technologies of pottery production (painted Neolithic pottery and graphite Eneolithic ones) show an increasing specialization and sophistication of the production of pottery through time – using obsidian as a temper. This correlates with less and less elaborate pottery decoration, which is soon reduced to a simple graphite fine cover during the Eneolithic (B. Atanassov).

The final theoretical part focuses on the underlying assumptions and concepts that have driven the study of flints since their modern introduction in archaeological research. L. Barfield shows on the one hand the increasing importance of lithic and raw materials studies, and on the other the ways of adding humanistic dimension to these investigations. Three case studies have been presented looking at different aspects of lithic technologies. B. Kavur gives an excellent example of the invisible – symbolic aspects of Neolithic adze production and core reduction. B. Tripkovic focuses on two cross-cultural human issues, namely the quality and the value of obsidian artefacts. Ts. Tsonev enlarges the focus and explores the driving stories, metaphors that turn the natural landscapes into nested humanized fields of annual cycles of human experience.

At the round table discussion we anchor the exploration by offering a brief discussion of the larger European context in which the human issues addressed in the theoretical session reside. It starts with discussion principles of technological change over hundreds of years in the single species *Homo sapiens*. The workshop sessions have been looked as featuring narratives that seem appropriate for two major reasons, one of the external world and the other of human psychology. Narratives suit the nature of complex and singular unfoldings of human and technical evolution. They create this style of explanation as the only adequate approach for achieving details of human understanding. Second, our predisposition as humans favours narratives and this turns out to be the best way of approaching studies of the complex past human behaviour.

#### Excursion

It has been organized a half-day excursion to the Temnata cave. Since 1984 till 1996 a Bulgarian – Polish – French team explored and excavated the Karlukovo karst area. This is a complex karst system with developed canyons and valleys which preserve traces of continuous human occupation since 200 KYR till present day. The major point of visit were the trenches of the middle and upper Palaeolithic occupations in the Temnata cave. Visits were made also to open Palaeolithic, Neolithic sites in the Karst, as well as sites rich in micro-fauna.

Because of the interest of participants an additional trip – about 40 km long – has been made to visit two Palaeolithic cave sites: Samuilitsa I and Samuilitsa II caves.

## SCIENTIFIC CONTENT OF THE WORKSHOP

Scientific introduction  
Theoretical framework  
Interpretations  
New archaeological data

### Scientific introduction

One of the major goals of the project was introduction of new high-standard research methods and to adapt them in such a way so as to inspire similar investigations in southeastern European countries. As a standard we took the GIS research done by the Italian team: E. Montagnari-Kokelj, Ch. Piano, F. Cucchi. As a preliminary preparation for the workshop a joint presentation: Tsonev, Montagnari-Kokelj, Piano has been delivered at the CAA Conference in April in Vienna. Based on this preliminary work a larger presentation (Tsonev, Montagnari-Kokelj, Piano) served as a scientific introduction to the workshop. It consists of several mathematical models: risk avoidance hunting practices in Upper Palaeolithic, Mesolithic/early Neolithic transition in Trieste Karst, ritualization of crises situations and their GIS applications. Additionally Ch. Piano demonstrated a computer interactive presentation of the model of Mesolithic/early Neolithic transition in Trieste Karst.

### Theoretical framework

The introduction of new research techniques such as integration of various data: geological, archaeological, etc. and their use for formal modeling is made with the aim to achieve better knowledge for humanistic interpretations of the archaeological data. This is a new and appropriate methodology in which prehistoric technologies and past human behaviour may be examined and understood in a better way. At the first place we can put the interplay between the prehistoric techniques and the raw materials that we might predict and model. On the second place, there are data that we cannot predict – they are arbitrary and contingent, which is more important to the ways in which prehistoric technologies evolved. The workshop brought together a large group of specialists to address this theme: the time-scales covered begin with Lower Palaeolithic techniques, move through the ways the human occupation happened in the late Pleistocene, early Holocene and end with pottery techniques. In the final session an anthropological dimension has been added to the interpretations of flint raw materials and techniques. The predominant understanding is that narrative explanations do not follow deductively from the laws of nature. Generally, they require knowledge of antecedent events. Outcomes of such past chains of events are contingent to the sequence of previous occurrences, each of which evolves in a different way. Explanations through narratives are detailed and decisive as the results obtained by experimental method, but they do not permit prediction from a known starting point. In other words we have no symmetry between prediction and explanation and though the beginning of the workshop puts an accent on predictable models, they only contribute to the narrative explanations represented throughout its sessions.

### Interpretations

The presentations and the subsequent discussions on Palaeolithic session split between more deterministic way of interpretations (St. Ivanova, M. Otte, J. Svoboda) and contingency base explanations and models (S.L. Kuhn, E. Uleberg, Ts. Tsonev). The problem stems from different scaling in assessing different phenomena. The answer lies somewhere between the extreme poles: full predictability and contingency as the only factor of change. For the present state of knowledge of southeastern European data, it is difficult to establish a proper scale for identifying trends of spread of early *Homo* in Europe. Lower, Middle and Upper Palaeolithic techniques seem to occur in a contingent manner and show extreme diversity: St. Ivanova, I. Krumov, Ts. Tsanova and J.-G. Bordes. Prehistoric technological chains are no more viewed as strictly defined procedures that map out the behaviour of anthropologically distinct *H. erectus*, Neanderthals, and modern humans. I. Krumov has detected the blurred boundaries between the different techniques such as Levallois, discoidal, single platform core reduction within the materials of the Samuilitsa II cave. The focus on particular technological chain characteristic for the earliest so far Gravttian in Europe reveals its strong dependence on predominant (hunting) activities, landscape features (closed deep valley) and raw materials (Tsanova and J.-G. Bordes). In the same line of interpretations it was shown the potential of micro-wear analyses in identification of traces of utilization of stone artefacts. They also show great diversity rather than uniformity relative to different types of tools and depend to a wide variety of factors such as: raw materials, type of settlement, predominant work activities, etc. (M. Gurova, M. Derndarsky).

The raw material session concentrated on various techniques of identifications of materials. But it were discussed the archaeologically important questions of high-quality, long-distance exchange patterns going as far as the Balaton area, Hungary (K. Biro). These long-distance exchange patterns have been interpreted as communication corridors (Ts. Tsonev, J. Svoboda) and as materials connected with hunting dangerous animals and with 'prestige' artefacts.

There have been made reports on scientific advance in identifications of raw materials. The accumulated knowledge and data, in Bulgaria, for example, make modern studies much easier. The presentation of Nachev, Kunchev shows the integration of the old data of detailed geological description of raw material outcrops and the modern tin-section base refraction studies of identification of stone artefacts from two prehistoric tell-sites. The session also discussed the question of better accessibility to raw material data. Modern techniques permit part of collections to be digitized and put on the web, which makes them available to researchers from other countries (Biro).

In the following debates and in the conclusions it has been recognized the increasing role of 'exotic' raw materials and long-distance exchange patterns in prehistoric studies. The theme becomes increasingly important because of its potential to explore archaeologically significant issues such as 'prestige', 'power', and personal 'wealth'. It contributes also to the present studies of violence and warfare among prehistoric communities and helps to detect the (unbelievable for the present-day expectations) long-distance patterns of communication and exchange.

The next session considered why it is that the transition between hunting and gathering, and farming looks intuitively like linear progression. The question is what evidence do we have that will back the alternative view that this is not a simple process of human responses to random variation in the environment. The strange, non-rational (from our point of view) behaviour of prehistoric communities occurs in different environments and climatic conditions: Scandinavia, Western Europe,

Western Balkans, Eastern Balkans. But its appearance seems to remain always within a single frame of a archaeological evidence: presence of 'exotic', specialized production and exchange of 'special' artefacts, appearance of tell sites, or fixed orientation of long houses in western Europe, long-distance networks of communication and exchange, etc. The transition between hunting and gathering and cultivation has traditionally been presented in archaeology, and is still popularly regarded, as an evolutionary progression. More sophisticated explanations vary around the idea that the origin of agriculture depended on the conjunction of a repeated climatic phenomenon with specific cultural practices that had been previously unknown, namely a social system based upon delayed return. Though it has already been recognized that there is no absolute progression in evolution, the question of how we can explain the human adaptation to particular ecological niches remains open. The session was designed to go beyond the neo-Darwinian theoretical frame and addresses the issues about emerging gender tensions, social hierarchy and inequality, and their influence on the radical changes that prehistoric communities and technologies underwent. All participants put a particular accent on the strange, irrational behaviour of the last hunter-gatherers and early farmers, and the patterns of sudden discontinuous change.

E. Uleberg gave an excellent example of the strange behaviour of Norwegian Mesolithic communities in the change of their settlement pattern and raw material supply strategies. The explanation taken from chaos theory states that human behaviour changes in an unexpected way given the presence of strong *attractors* and a compact set of complex conditions that govern the system. The evolution of the whole system behaves in a catastrophic way with unexpected trajectories of human choices. E. Montagnari Kokelj and Ch. Piano make a detailed presentation of local vs. long-distance origin of flint and other stone artefacts. The obvious contrast between the Trieste Karst as an area with low economic value and the presence of many 'exotic' materials emerges. The authors stress the important *place value* ascribed to the Karst and the cave sites which are associated with *liminality* of particular community rites that challenge the traditional opinions of the "marginality" of Karst areas in the developing of complex human societies.

A. Hauzeur focused on economic networks represented by the raw material supply networks between the northern LBK communities and those in the Mosel valley considering further exchange between this region and Parisian basin. This stays in stark contrast with the distribution of pottery styles. While the lithic styles may be considered as more conservative and resistant to change the ceramic styles can serve as a background that delineates the complex dynamics of population movements within a macro-regional scale.

The interconnection between the pottery and lithic styles reveals important connection between the emerging gender tensions and social inequality. The inverted contexts of tell-settlements and cave-sites and the appearance of long blades and tulip-like pottery represents the balance reached by the male and female ideologies in stabilizing the social model of tell-settlement. This allows maintaining the inter-community violence at an acceptable level (Tsonev).

The increasing complexity of the pottery production as a technology goes in hand with disappearance of the painted decoration on its surface. Finely made graphite or other kind of angoba cover replaces the rich and varied decoration of the Neolithic. These technological changes may also reflect the changing social realities within the prehistoric communities in the Balkans (Christmann, Atanassov).

The theoretical introduction to the Round Table discussion focuses on general interpretations of prehistoric technologies giving particular examples of their social and symbolic role. Prehistoric technologies are often understood as tightly connected with biological evolution: Clactonian related to *H. erectus*, Levallois technique related to Neanderthals, etc. Technologies are rather broadly connected with human communication and social reproduction. They are shared and negotiated systems of meanings and practices informed by knowledge that people learn and put into practice by interpreting experience and generating behaviour. In that sense flint as a raw material goes beyond its simple economic value. It becomes symbol of 'prestige' and often expresses relations of hierarchy and power (Barfield).

Technologies can express different community perceptions on different ways of making objects. Adze production and use means not only cutting trees but socially reproduces complete social relations. On the contrary, core reduction and subsequent exchange of flakes, blades, etc. means reproduction of partial ties of debt and enchainment within prehistoric communities (Kavur). Thus obsidian has much more social than economic value (Tripkovic). From a more general point of view prehistoric technologies may be considered in their wider context of humanized landscapes. They constitute nested cycles of human experience and knowledge within invisible socially meaningful landscapes (Tsonev).

#### New archaeological data

As a preparatory work, A. Hauzeur, G. Trnka, A. Kunov, Ts. Tsonev did a study trip for obsidian outcrops in Bulgaria. This is an important issue that has inspired archaeologists and geologists since 1960-es when the first obsidian identification methods have been applied to the Greek and Anatolian obsidian outcrops. The provenance of obsidian artefacts in Anatolia has been identified, yet some of the obsidian artefacts in European Turkey have not been identified with the known sources. The simplest supposition was that they come from Eastern Rhodopes or the Black sea coast in Bulgaria. Prof. Angel Kunov, Institute of Geology, Bulgarian Academy of Sciences, led us to visit the known obsidian sources and other potential places for finding obsidian. The results are that there is no obsidian in Eastern Rhodopes. Small obsidian nodules of low quality have been identified at the Cape Kjuprija, the town of Primorsko (Black Sea coast) and behind the lighthouse near Achtopol (Black Sea coast). The greater potential for exploitation showed the Primorsko outcrop. Samples from all obsidian outcrops have been taken for further analyses in Brussels and Vienna.

With this trip, however, the long standing myths of presence of obsidian (suitable for prehistoric exploitation) have been put an end.

#### Assessment of the results, contribution to the future direction of the field.

The Round Table discussion concerned the assessment of the results, the definition of the new field of research and its future. There were outlined several theoretical issues that portray the range and the scope of the new field of research. It has been recognized that within the human evolution the natural selection was not the single driving mechanism of change and development. The natural selection has gradually been replaced by human culture which, in turn, is built up by nesting knowledge of human experience and practice transmitted from generation to generation. The



question is whether we can detect parallel trends in biological and human evolution or these trajectories go in completely unpredictable ways. Then the problem of scaling emerges which adjusts the focus of our observations for definition of proper trends in biological and human evolution. This way the traditional picture of spread of early hominids in Europe through the Balkans and Middle Europe becomes more dynamic and cannot be reduced to a simple diffusionist model. The very early appearance of facies of particular techniques associated with Neanderthals and modern humans: Levallois and earliest Gravettian in Europe – 36-39 000 cal. B.C. – reveals that they cannot be ascribed to advancing waves of anatomically modern humans: Neanderthals relative to *H. erectus* and modern humans relative to Neanderthals. The occurrence of these techniques seems to be completely hazardous and the problem needs to be addressed in a much greater detail. The study of raw materials associated with these techniques emerges as a central problem that traditionally has been neglected. This can partly solve the question of the global trends of spread of early hominids by eliminating the technological bias introduced by traditional evolutionist modes of research. It has been recognized that the best way of description of raw materials, archaeological data and their integration with geological and other data is through GIS. The latter renders them in an accessible and ready-made form suitable for creating further analytical models. This is a brand new research field of creation of Digital Terrain Models on GIS that are suitable to archaeological and museum presentations. It demands also a lot of additional archaeometric studies of identification of various materials ranging from Neutron Activation Analyses, Spectrometry, Stereomicroscopy, X Rays Diffractometry, Scanning Electronic Microscopy, etc. Only through genuine scientific studies and detailed analyses we can disperse some myths (inspired by political aspirations of the modern national states) of presence and prehistoric use of some materials: the obsidian in Bulgaria? Such a sound picture of spread of raw materials and distribution of ‘special’ for prehistoric people artefacts can help us add a new humanistic dimension to proper archaeological studies in southeastern Europe. This issue is important for two reasons: the studies of long-distance exchange patterns have never been done before because of the political boundaries and the Marxists ideology that dominated humanities in most of these states. Previously, researchers were compelled to reveal the uni-linear evolutionist trends of social development put within the nationalistic frame of rivalry between the neighbouring nations. This put an accent on local and particular rather than to the similarities and differences considered within a larger supra-regional scale. Thus a considerable amount of interesting archaeological materials have been buried in various museum depots in archaeological/historical museums in southeastern Europe. Only through advanced scientific study and compared with the better studied and known materials from Western Europe, Greece and Turkey can make them available to the larger scientific community and have better outreach to the general Public.

The humanistic interpretations of thus re-discovered data give wider opportunities for further research and public presentations. In the communist times the major theme was the periodization of “distinct” archaeological cultures which cover more or less the territories of the present nation states. The only explanation for change starting from Lower Palaeolithic upwards was the migration and domination of invading cultures – reflection of the political realities after the World War II. And this image of the prehistoric men (women are almost excluded) as conquerors and hunters was embedded through the curriculum in school children. Thus the image of the neighbours as enemies, the notion of political, military and cultural superiority

spurred the nationalistic myths and ideologies in the Balkans and contributed considerably to the wartime realities in former Yugoslavia.

The present workshop delineated a completely different field of studies that is new for the post-war realities in the Balkans. It concentrates on gender relations, appearance of social inequalities, the indirect intimate relationships of prehistoric communities with the environment. These themes are wide enough and include a lot of archaeological artefacts that have symbolic and social significance other than their everyday use. Tracing back their origin and long-distance exchange crosses boundaries – not only political – that change the attitudes and research schemes traditionally considered to be the only one genuine for archaeology. Thus the workshop creates a solid base for bridging the gaps left by the Cold War in archaeological research. There is a clear need to network the otherwise separated archaeological communities and build up a shared museum collections, shared knowledge and experience between researchers from different countries and between the researchers and the general Public.

**The Humanized Mineral World: towards social and symbolic evaluation of  
prehistoric technologies in southeastern Europe**  
*ESF Exploratory Workshop, 3-6 September 2003*

**FINAL PROGRAMME**

**Thursday afternoon:**

**13:30 Opening ceremony** - the lecture hall of the Institute of Archaeology and Museum

**Official guest: Major Scientific Secretary of the Bulgarian Academy of Sciences - Prof. Jakimoff.**

**Scientific introduction to the workshop.** Joint presentation of Tsoni Tsonev, Emanuela Montagnari Kokelj and Chiara Piano - Analytical modeling of archaeological tasks and GIS applications ~ **40 min.**

**Duration of the communications: 20 min.**

**14:30 Palaeolithic Session - Chairpersons Marcel Otte and Steven L. Kuhn**

1. Steven Kuhn - Initial UP at Ucasli cave Turkey: local characterizations and global affinities.
2. Stefanka Ivanova – Raw materials exploitation strategy during early Palaeolithic (Examples from Lower Palaeolithic sites on the territory of Bulgaria).
3. Ivo Krumov - Core Reduction Strategies in Samuilitsa II cave

Coffe break - 10 min.

4. M. Otte – Mental templates and lithic technologies
5. W. Antl – Grub/Kranawetberg, Lower Austria and the Gravettian sites in Austria with a special perspective to raw material and long distance contacts.
6. Jiri Svoboda - The Moravian corridor. UP landscapes and raw material exploitation.
7. Tsenka Tsanova – Le Gravettien en Bulgarie du Nord: le niveau IV de la grotte Kozarnika.
8. Tsenka Tsanova and J. – G. Bordes – Contribution au débat sur l'origine de l'Aurignacien: étude technologique de l'industrie lithique de la couche 11 de Bacho Kiro.

Discussion

**Official Cocktail - wine testing from different countries.**

**09:30 Friday morning**

**Session: Micro-wear analysis - Chairpersons Anne Hauzeur and Maria Gurova**

1. Monika Derndarsky (Wien) – Functional analysis of the microgravettian points and backed bladelets from Stillfried/Steinschlägeratelier – preliminary results
2. Maria Gurova (Sofia) – Matières premières et tracéologie: trajectoires implicites.

Discussion

Coffee break

### **11:00 Raw material session - Chairpersons Katalin Biro and Kancho Kanchev**

1. Kancho Kanchev, Chavdar Nachev (Sofia) - Petrographic characteristics of stone artefacts from the early Eneolithic settlement near Rakitovo, Pazardzhik district, South Bulgaria
2. V. Stoyanova, K. Kanchev, Ch. Nachev (Sofia) - Quarry sources of stone implements from the Azmak tell near Stara Zagora, South Bulgaria.
3. Angel Kunov, Anne Hauzeur, Gerhard Trnka, Tsoni Tsonev – The Bulgarian obsidian: myth or reality? The point of view of geologists and archaeologists.

Discussion

Lunch break 12:30 - 14:00

### **14:00 Friday afternoon**

4. Katalin Biro - The Humanized Mineral World: web-based common resources

Discussion

Coffee break

### **15:00 Mesolithic/Neolithic transition session - Chairpersons Emanuela Montagnari Kokelj and Espen Uleberg**

1. Espen Uleberg - Strange attractors in Norwegian Mesolithic
2. Emanuela Montagnari Kokelj, Chiara Piano - Local vs. exotic flint industries in the Trieste Karst (north-eastern Italy)
3. Anne Hauzeur - Disconnection in economic and cultural network during LBK: the example of Middle Mosel
4. Tsoni Tsonev - Long blade distribution and appearance of early Neolithic tulip-like pottery in eastern Balkans
5. Elmar Christmann – Obsidian used as temper for pottery making in Greece.
5. Bogdan Atanassov - Pottery technology in Durankulak, north-eastern Bulgaria

Discussion

### **09:30 Saturday morning**

#### **Theoretical Introduction to a Round Table Discussion**

#### **Chairpersons - Lawrence Barfield and Boban Tripkovic**

1. L. Barfield - Social and symbolic aspects of flint in European prehistory
2. Boris Kavur - The things we did not find. Adze production and core reduction at the site of Tetez - Sredno Polje in SE Slovenia.
3. Boban Tripkovic - The quality and value in Neolithic Europe: an alternative view on obsidian artefacts.
4. Tsoni Tsonev - Landscapes: between land-use and invisible.

#### **Round Table Discussion**

14:30 Saturday afternoon Excursion to Temnata cave. Start from the hotel of BAS.

## FINAL LIST OF PARTICIPANTS

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## **PARTICIPANT'S DETAILS**

### **Countries of origin:**

Bulgaria - 9  
Austria – 3  
Belgium - 2  
Italy – 2  
Norway – 1  
USA – 1  
UK – 1  
Germany – 1  
France – 1  
Hungary – 1  
Czech Republic – 1  
Slovenia – 1  
Serbia – 1

### **Age structure of the participants**

Senior research officers (professors) – 2  
Research officers (associated professors/museum curators) – 17  
PhD students/junior research officers - 5