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Archaeozoology in Hungary

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ABSTRACT: This study describes how two different branches of investigation, archaeology and zoology/paleontology, dependent on geopolitical and ideological circumstances, have effected the emergence of archaeozoology in Hungary during the 1860s. The second aim was to study, whether the consideration of ideological context by certain scholars may have been the reason behind historical influences in archaeozoology. Our results, however, suggest that individual contribution have been of major significance in this discipline, cultivated only by a minority of experts in Hungary.

A quantitative analysis was carried out on the basis of bibliographical data representing 30 years, in order to characterize key features of archaeozoological research in Hungary and their coincidence with political and cultural trends. The basis of calculations was the chronological, regional and linguistic composition of publications dated to between 1965 and 1995. This simple scientometric description shows that international cooperation in archaeozoology has profited from both economic stability and the gradual decline of political isolation during the 1960s and 1990s. The dominance of prehistoric research (a very international period) and the quantities of foreign language publications (especially in English) clearly illustrate this trend. Considering these forces may help in fine-tuning the education and practice of our discipline in spite of mounting difficulties in employment and funding in general at the beginning of the new millennium.

KEY WORDS: HUNGARY, CULTURE HISTORY, REGIONAL ARCHAEOZOOLOGY, LANGUAGES OF PUBLICATION

RESUMEN: Este estudio describe los modos en que dos diferentes direcciones de investigación, las de arqueología y de zoología/paleontología, dependientes de las circunstancias geopolíticas e ideológicas, han afectado la emergencia de la arqueozoología desde los años 1860 en Hungría. El objeto segundo es el de averiguar si el contexto ideológico era considerado por parte de los expertos y cuales podrían ser las razones para esta influencia histórica. Sin embargo, nuestros resultados demuestran la mayor relevancia de contribuciones individuales a este disciplina representada por una minoría de expertos en Hungría.

La información bibliográfica de 30 años constituye la base de un análisis de tendencias científicas cuyo objetivo es caracterizar los rasgos claves de la investigación arqueozoológica en Hungría que coincidan, de manera tan precisa como sea posible, con cambios en la situación política y cultural. La base de estos cálculos es la composición cronológica, regional y lingüística de las publicaciónes arqueozoológicas entre 1965 y 1995. Esta simple descripción evidencia que durante las décadas de los años 60-90 las cooperaciones internacionales fructificaron gracias a la estabilidad económica y amengüamiento gradual del aislamiento político. La dominancia de la investigación prehistórica (un periodo muy internacional), y la cantidad de publicaciones escritas en lenguas extranjeras (especialmente en inglés) confirman esta tendencia. El artículo concluye con una breve consideración sobre la importancia de estas fuerzas a efectos de desarollo de la arqueozoología en el nuevo milenio.

PALABRAS CLAVE: HUNGRÍA, HISTORIA CULTURAL, ARQUEOZOOLOGÍA, LENGUAS DE PUBLICACIÓN

INTRODUCTION

"...all true believers shall break their eggs at the convenient end..."

Jonathan Swift, 1726

In contrast to *zooarchaeology*, the term *archaeozoology* has been preferred for the identification, analysis and interpretation of animal bones from archaeological sites in Hungary (c.f. Bobrowsky, 1982). This implies that the Central European version of this discipline has traditionally been developed and practiced by natural scientists (paleontologists, veterinarians etc.), who added the adjective "archaeo-" when defining the specific aspect of their zoological work.

Traditionally, an empirical approach combined with inductive reasoning, stemming from the antiquarian's approach, has dominated archaeological theory in Central Europe. Roughly speaking, the more data one collects, the clearer are the patterns that may be expected. In Western Europe (as well as North America) a more deductive strategy, similar to that of the experimental sciences, has recently become prevalent: data must fit the needs of properly testing *a priori* hypotheses. Archaeologists brought up with this way of scientific thinking are better equipped to become *zooarchaeologists* than archaeologists in our region, who tend to rely on the expertise of specialists in dealing with animal remains.

Scarce and non-experimental (non-reproducible) archaeological data, unfortunately, seldom lend themselves to rigorous statistical testing. This fact has led to a degree of understandable impatience with "processual" methods, which when pursued correctly often yield nothing but commonplace results. Archaeozoologists, on the other hand, in command of inductively treated osteological information may feel tempted to draw just about any culture historical conclusion they desire from their ever increasing inventory of animal remains.

THE FIRST CENTURY OF ARCHAEOZOOLOGY

The term *køkken møding* (kitchen midden) was first used by Japetus Steenstrup at a meeting on January 10, 1851 of the Scientific Society in Copenhagen in a preliminary report on sea shell deposits that also contained archaeological artifacts and bone. This was the first known attempt in Europe to distinguish animal remains originating from archaeological contexts from palaeontological finds (Forchhammer *et al.*, 1851-1856).

Although both paleontology and comparative anatomy had developed at the beginning of the 19th century in Hungary as well, the first archaeozoological paper, i. e. osteological study with historical connotations, was published by Ferenc Kubinyi in 1859 (Kubinyi, 1859). He discussed the osteology of horse and camel *vis à vis* the AD 9th century Hungarian Conquest of the Carpathian Basin i.e. present day Hungary. This was the year when Austria lost Lombardy in the battle of Solferino and the Habsburg Empire was weakened. Events culminated in the historical Compromise, the foundation of the Austro-Hungarian Monarchy, in 1867. National sentiment increased in Hungary and other provinces (Hanák, 1988: 124). Romanticism ruled in culture and Kubinyi, a polyhistorian and a liberal MP (Figure 1) previously jailed for his support for national independence, understandably tried to put his expertise to the service of historical research.

While Kubinyi's 1859 study became of anecdotal significance when the camel find in question turned out to be a fossil specimen, the scientific atmosphere in which this work was written is also noteworthy: 1859 was hallmarked by the publication of Darwin's "The Origin of Species", and Rütimeyer's groundbreaking work on the fauna of Swiss lake dwellings soon followed (Rütimeyer, 1861).

Identification work at archaeological excavations got underway by the second half of the 19th century (e.g. Báthory, 1867; Gubitza, 1899), and interest in ancient Hungarian animal husbandry further increased. Gyula Brummel (1900) published a series on the animal breeding of Conquering Hungarians. József Besskó wrote his dissertation on the craniology of Conquest Period horses (Besskó, 1906), while Béla Szalay (1915: 1930) summarized the history of aurochs and bison in Hungary. An excellent summary of local research history during this early period was published in Hungarian by Vörös (1993).

Research after World War I is best characterized by the historicism in the works of Béla Hankó (e.g. Hankó, 1935) who provided a romantic recons-

FIGURE 1
Ferenc Kubinyi (1796-1874).

truction of ancient domesticates which, to some extent, suited the official image cultivated after the Great War (as well as two thirds of Hungary's territory) had been lost. The objective academic merit of his work is shown by the fact that Hankó's research survived radical political changes after World War II (Hankó, 1954), its only weakness being that he did not always rely on a solid basis of osteoarchaeological evidence. Thus many of his theories still should be regarded as hypotheses to be tested (Matolcsi, 1970: 13).

DEVELOPMENTS AFTER WORLD WAR II

Although academia did not escape political dogmatism that dominated east of the Iron Curtain, many scientists cooperated with the new political system with an attitude of mental reservation. "The Five Year Plan of Hungarian Zoology" written by the eminent scientist Endre Dudich (1952: 426-427) shows how a brilliant scholarly mind was forced to tragicomically slalom amongst ideological pitfalls to justify "sybaritic" basic research that he knew had to be maintained at all costs. Among social sciences, archaeology was probably least prone to crude political ideology. In fact, most archaeologists have been so immunized by doses of vulgar Marxism-Leninism during the 1950s and 1960s, that when Marxist theory was rediscovered in Western archaeology during the 1970s, it appeared deluded to most Hungarians. Strangely enough, the functional paradigm, i. e. economic aspects of archaeo[zoo]logy (O'Connor, 1996: 12) are implicitly representative of such a quiet, "materialistic" trend amongst the highly formalized interpretation of stylistic phenomena in Hungarian archaeology.

On the other hand, Gordon Childe was probably the sole western archaeologist who visited Hungary in 1955 (although Stalin had already died in 1953, there was no obvious thaw in the political climate in sight). Childe's explicitly culture historical paradigm had resonated very well with archaeological tradition in Hungary. In a sense, it seems as if he has never actually left the country.

It was in this intellectual atmosphere that Sándor Bökönyi started modern archaeozoological research in Hungary: He was the first in Hungary to systematically use broad evidence from excavated bone materials to create a more objective picture of human-animals relationships. He started working on horse skulls and skeletons in the Museum of Natural History and the National Center of Museums as a veterinary student in 1949. His position was officially acknowledged following graduation in 1951, when he was granted a full time job in the Hungarian National Museum where he established the museum's Archaeozoological Collections.

Throughout its history, Hungarian research has usually developed within the sphere of German speaking scholarly tradition in Central Europe. After World War II, Bökönyi's "Great Generation" in this region included well respected archaeozoologists such as Elisabeth Schmid and Hans-Rudolf Stampfli in Switzerland as well as Joachim Boessneck in the former West Germany.

Until 1965, Bökönyi's research was mostly limited to archaeological sites in Hungary, with only an occasional glimpse at adjacent geographical areas. This was both the consequence of the political situation and the early development of a relatively young scholar. A few years after the 1956 Hungarian uprising (whose fall brought about a schizophrenic compromise between geo-

political reality and the need to pacify the people, dubbed popularly, "Goulash Communism" in the West), Bökönyi's career thus coincided with a prosperous period in Hungarian archaeology characterized by the gradual acceptance of a multidisciplinary approach and steadily improving international relations. Relative to the country's area, Hungary has taken the second place after Denmark in terms of the number of archaeozoological publications among European countries (Benecke, 1999: 155, table 1). Although this calculation has not taken into consideration valuable but unpublished research reports submitted to university departments and granting agencies in the recent past (e.g. in Great Britain), it clearly shows the advanced position of archaeozoological research in Hungary. Nevertheless a general deceleration in research activity may be observed since the state started gradually withdrawing from subsidizing the public sector (including heritage management) in countries of the former "Eastern Block" (Schild, 1993: 146).

DEVELOPMENTS BETWEEN 1965 AND 1995

At the beginning of the period under discussion here, Bökönyi was still the only archaeozoologist working in Hungary, and his research largely determined the character of this field during the next three decades. A new period in Hungarian archaeozoology started in 1966 when Bökönyi received a Ford fellowship that took him to the United States. During this trip, which lay the foundations of his future international cooperation, he became known as a regional authority in archaeozoology. His next journey took him to Iraq in 1969 (Figure 2).

Bökönyi's research thus filled a gap between two historically separate geopolitical areas. The Carpathian Basin itself has served as an important transitional link between the Near East and the rest of Europe since prehistoric times. Archaeozoology in Hungary thus not only contributed important regional information, but also linked traditionally German-oriented Central European archaeozoology and relevant anglophonic prehistoric research in the Middle East marked at the time by names such as Robert Braidwood and Charles Reed. (Such involvement of Central European archaeozoologists in American projects in Southwest Asia is, however, not without a precedent. Ulrich J. Duerst, whose name is best known for the 1926 zoological adaptation of the anthropological osteometric standard developed by another Swiss scholar, Rudolf Martin, had been hired by Richard Pumpelly for his 1905 expedition to Turkmenistan; Duerst, 1908).

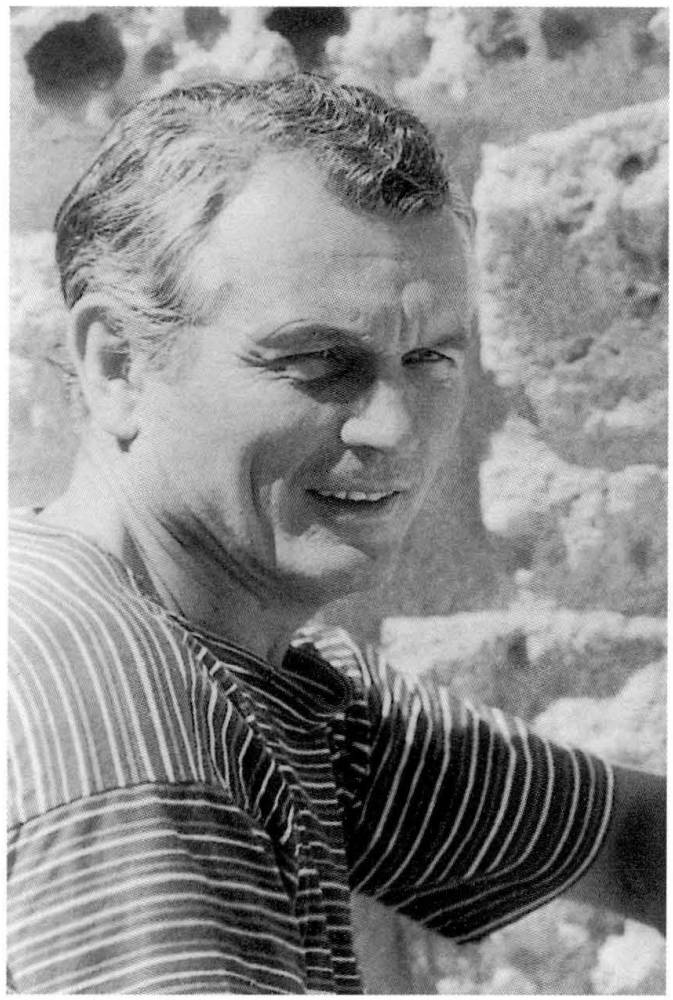

FIGURE 2
Sándor Bökönyi (1926-1994) in the field during the 1970s.

In 1957 János Matolcsi (1923-1983), a career politician and Minister of Agriculture in 1955-1956, became director of the Agricultural Museum in Budapest, maliciously dubbed the "cadre cemetery" of the Agricultural Ministry. He started studying archaeozoology in 1961 and, to his credit, earned a doctorate in animal science in 1966. Subsequently, he used his influence to establish the famous Osteological Collections there (Figure 3). Currently, the museum houses over 10,000 inventory items (including series of skeletons), predominantly from modern domestic animals. Equipped with this impressive reference material, he turned to full time research in archaeozoology in 1969 (Figure 4).

FIGURE 3
The "longhorn rack" in the Agricultural Museum, Budapest.

Although Matolcsi started his academic career when he was almost 40 and was thus less known internationally, he put his political connections to the service of our discipline in yet another way. Between April 19 and 23 1971, the 75th anniversary of the Agricultural Museum was celebrated with a special event: he organized the Third International Congress of Agricultural Museums in Budapest. Session IV, with its 75 participants from 18 countries (Matolcsi, 1972: 95) was to become the first meeting of ICAZ. In organizing this event, he requested the help of Bökönyi, by then well-established in the international scene. The title of the proceedings, *Domestication Research and the History of Domestic Animals* (Matolcsi, 1973) reflects the main trend of investigations at the time.

In 1973, partly as a result of his increasing involvement in prehistoric research in the Middle East, Bökönyi was invited to the Archaeological Institute of the Hungarian Academy of Sciences to join a team of prehistorians interested in the "Neolithic revolution". During those years, international interest in the Great Hungarian Plain (the westernmost steppe region as well as the northwestern border zone of the distribution of multi-layered prehistoric tell settlements) culminated. The late 1960s and 1970s were also the heyday of US prehistoric research in former Yugoslavia, where the country's post-war aid arrangements created a favorable constellation for such cooperation. Bökönyi's expertise and availability secured his position at these excavations. Most of his research was thus concentrated on the development of Neolithic animal domestication in the vast territory that stretches between Iran and the Carpathian Basin.

In 1974, his landmark book, entitled *History of Domestic Mammals in Central and Eastern Europe*, was published. This regional summary soon became a "must" for those working in our area. As a handbook packed with basic data, even its (regrettably unabridged) 1988 edition retained most of its original relevance.

Following some polemics, the ideas of "New Archaeology" had reached Hungarian archaeologists during the second half of the 1970s (Kalicz & Raczky, 1977). In a paradox manner, however, they have been mostly looked upon from a methodological point of view, while their theoretical implications have been largely neglected. As was observed by Laszlovszky & Siklódi (1990: 288): "*The growing need for the application of various analytical methods became obvious, but appendices of this kind inserted at the end of archaeological articles very often only gave a semblance of modernity*". Unfortunately, while Bökönyi contributed to the universal methodological development of "New Archaeology" (Török, 2000: 15), systematic screening and water sieving have yet to become standard excavation methods in Hungary (Bartosiewicz, 1983). "Western style" field walks, also first promoted by an archaeozoologist in Hungary (Choyke, 1981: 95), were painstakingly reinvented by one of the progressive archaeologists half a generation later (Jankovich, 1993). With a few notable exceptions, an organic and interactive relationship between archaeology and natural sciences is still at an early stage of "pre-processual" development in Hungary.

Bökönyi's post at the National Museum was eventually given to his student, István Vörös. As a young zoologist he closely cooperated with Paleolithic archaeologists (for both geological and culture historical reasons early periods have been relatively neglected in Hungarian archaeology).

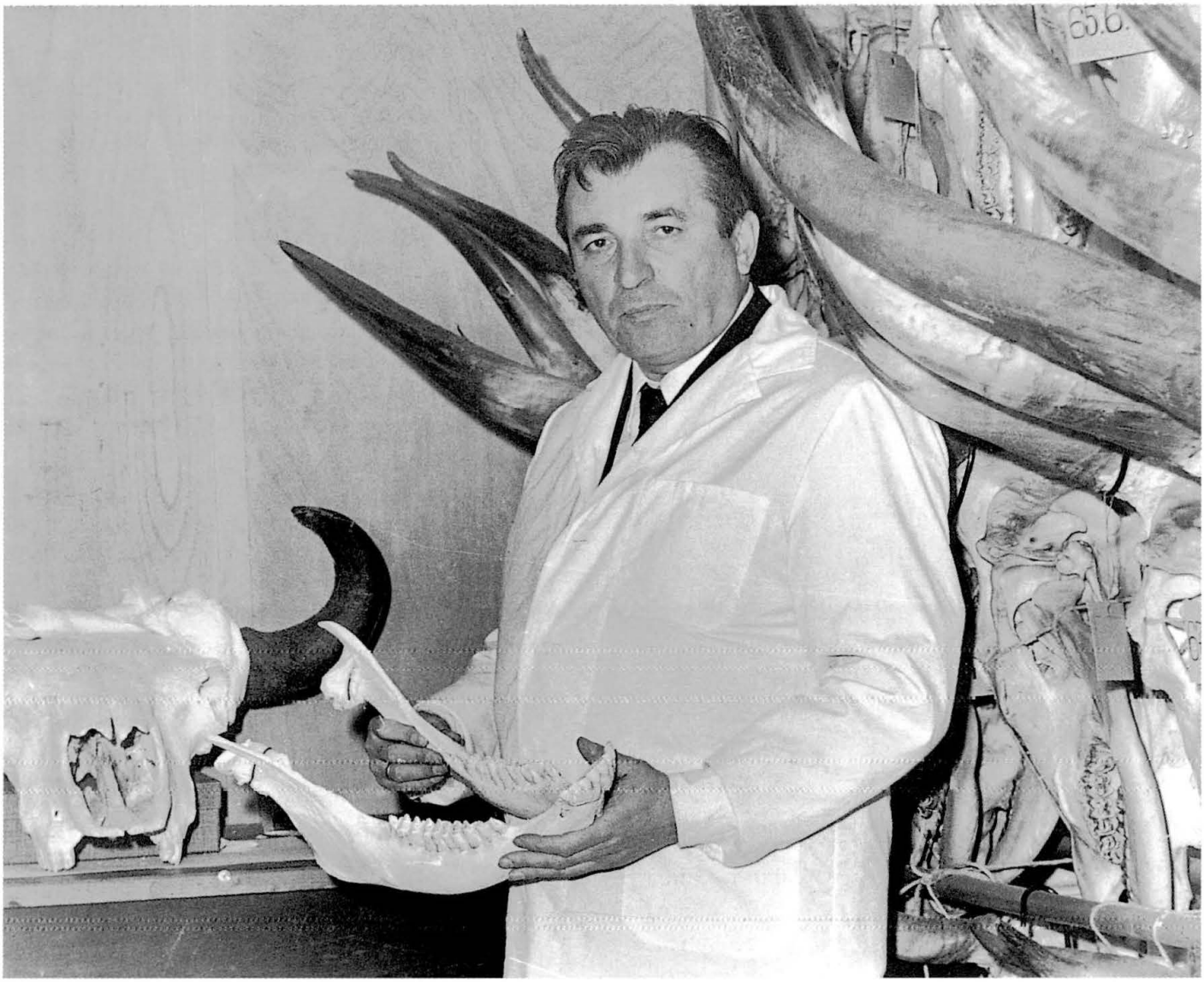

FIGURE 4
János Matolcsi (1923-1982) in his collections in 1977.

At this point, the influence of two prominent paleontologists on post-war Hungarian archaeozoology must be mentioned. Their valuable contributions can be measured more in qualitative than in quantitative terms. Miklós Kretzoi took an active part in training both Sándor Bökönyi and István Vörös and sometimes identified animal bones from archaeological sites himself. Dénes Jánossy, another paleontologist and ornithologist, has been the only person consistently carrying out research on bird remains in archaeological assemblages.

Between 1981 and 1990, Bökönyi served as director of the Archaeological Institute of the Hungarian Academy of Sciences. This was both an acknowledgment of his academic achievements and his international standing, but also meant a distraction from research. He had to work very hard to keep abreast with developments in the "real" world. Financial resources dried up year by year as the state started withdrawing from subsidizing the public sector. Following the historic changes in 1990, Bökönyi, a politically moderate professional, was unanimously re-elected for another four year term. During this time several of his publications were devoted to public affairs and scientific policy-making (e.g. Bökönyi, 1991, 1993).

By the beginning of the 1980s, new faces in Hungarian archaeozoology included the authors of this paper: Alice M. Choyke, another Bökönyi student (then a PhD student in anthropology from the

State University of New York in Binghamton) and László Bartosiewicz (originally trained in animal science in Hungary).

Meanwhile, Matolcsi also trained his own student in archaeozoology, István Takács (1954-1993). He originally had an engineering degree in agricultural hydrology but developed a special interest in fish remains. Following Matolcsi's death in 1982, Takács received his position as the curator of Osteological Collections in the Agricultural Museum for the next decade, until his own unexpected death. Currently, owing to unpredictable employment policy, the collections have been left without professional supervision.

A QUANTITATIVE REVIEW OF PUBLICATIONS BETWEEN 1965-1995

Acquaintance with the brief personal history of post-war archaeozoology in Hungary, may help the reader understanding the trends that characterized publication activity between 1965 and 1995. The following evaluation is in no sense meant to be a precise, scientometric analysis. For one thing, the application of impact factors, citation indices and the like (Garfield, 1972; Dieks & Chang, 1976) remain largely unknown in Hungarian archaeology. However, one of the few methods available for systematically measuring performance is appraising publication activity (Bökönyi, 1991: 840).

Three general features of publications have been singled out to reflect special tendencies in Hungarian archaeozoology and shed light on major turning points. Naturally, publications have their own inertia. Nevertheless, in spite of the usually 1 to 4 years spent "in press", they should (with some delay) reliably reflect developments in our field.

This evaluation is based on 375 publications (Table 1). The list is near complete, although some non-classifiable items (or non-archaeozoological publications by the aforementioned authors) have not been included. For the purposes of this simple review, no distinction has been made between articles and the few books published. Co-authored works were only entered once in the data base.

CULTURE HISTORICAL CLASSIFICATION

Owing to the preponderance of the culture historical paradigm, there is a powerful tradition of chronological specialization in Hungarian archaeology (Table 1A). As is shown in Figure 5, within this strictly structured chronological framework, archaeozoology was chiefly associated with prehistory, whose practitioners have been in the forefront of enlisting the help of natural scientists. This trend, also strongly influenced by Bökönyi's general interest in prehistory, as well as the aforementioned activities by Vörös in Paleolithic and Choyke in Bronze Age archaeozoology contributed to a peak of publications by the mid 1980s.

As far as the Migration Period is concerned, Bökönyi started his career studying Avar Period and Hungarian Conquest Period horses. During the late 1970s, Matolcsi turned to the archaeozoology of this period and tried to complement the scanty material from the Carpathian Basin taking advantage of relatively easy access to faunal assemblages in the then Soviet Union (Matolcsi, 1982). His unfortunately short career, however, did not last long enough to create an entirely coherent picture of this little known problem.

While Roman Period and Medieval topics were dealt with capriciously, Migration Period studies were evidently resuscitated by increasing national awareness after 1990, and especially the approaching millecentennary celebrations of the Hungarian state in 1996. Public interest has increased in Eurasian pastoral tradition that had reached the Carpathian Basin in several waves and culminated in the AD 896 Hungarian Conquest.

In addition to his administrative responsibilities as director, Bökönyi also published numerous general, theoretical papers (not classifiable by period) toward the end of his career. The gradual decline in the overall number of publications toward the early 1990s may also be attributed to the increasing withdrawal of state sponsorship from research and the concomitant "re-adjustment" of publishers to market economy in Hungary.

REGIONAL INTERESTS

Figure 6 summarizes the number of publications by the main geographic areas where our work

A	**Prehistory**	**Roman Period**	**Migration Period**	**Middle Ages**	**General**	**TOTAL**
1966-1970	11		3	1	13	28
1971-1975	15	3	8	2	11	39
1976-1980	29	8	9	4	11	61
1981-1985	44	5	6	10	15	80
1986-1990	43	12	6	6	17	84
1991-1995	32	11	12	13	15	83
						375
B	**Hungarian**	**German**	**English**	**Others**		
1966-1970	10	6	9	3		28
1971-1975	12	7	19	1		39
1976-1980	23	5	27	6		61
1981-1985	20	10	47	3		80
1986-1990	20	8	49	7		84
1991-1995	23	10	46	4		83
						375
C	**Hungary**	**Europe**	**Middle East**	**General**		
1966-1970	10	7	3	8		28
1971-1975	17	6	6	10		39
1976-1980	35	9	8	9		61
1981-1985	48	12	8	12		80
1986-1990	37	13	14	20		84
1991-1995	40	15	13	15		83
						375
D	**Bökönyi**					
1966-1970	18					
1971-1975	20					
1976-1980	31					
1981-1985	37					
1986-1990	38					
1991-1995	37					

TABLE 1

An overview of Hungarian publications in archaeozoology in the period 1965-1995 distributed according to (A) cultural periods, (B) language of publication and (C) regional interests. The publications of Sándor Bökönyi arranged in chronological order appear in (D).

has been carried out (see also Table 1C). The analyses of faunal material from Hungarian sites peaked during the early 1980's when, in addition to Bökönyi's unusually great number of site reports (predominantly on the prehistory of the Great Hungarian Plain), younger scholars also started producing such articles.

Political turmoil has increasingly plagued the Middle East and driven out western archaeologists from many countries in Southwest Asia. Iran, Afghanistan and Iraq, countries in the "Fertile Crescent", were all areas where Bökönyi had several projects at stake. Shock waves from the political events may be detected in this graph.

An early increase in European research outside Hungary was, in part, the result of archaeozoological investigations in the Balkans (including former Yugoslavia) as well as in the former Soviet Union

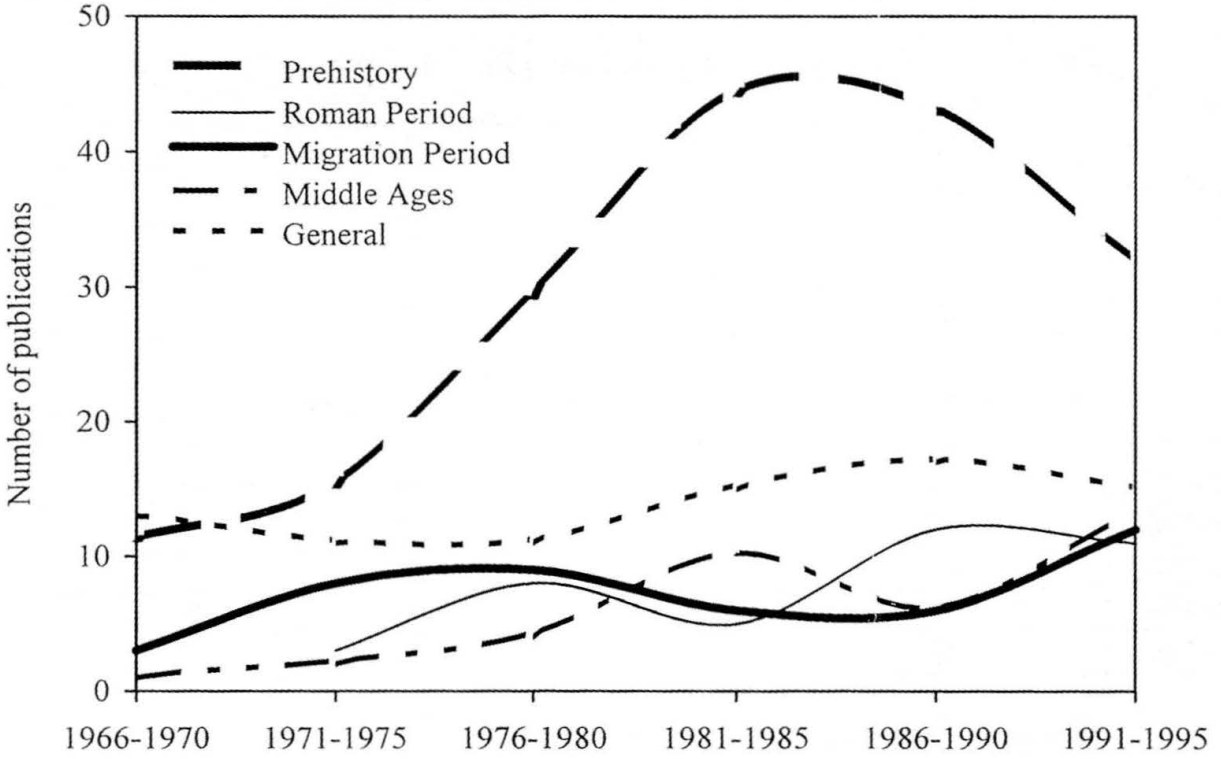

FIGURE 5
Trends in the chronological distribution of archaeozoological publications.

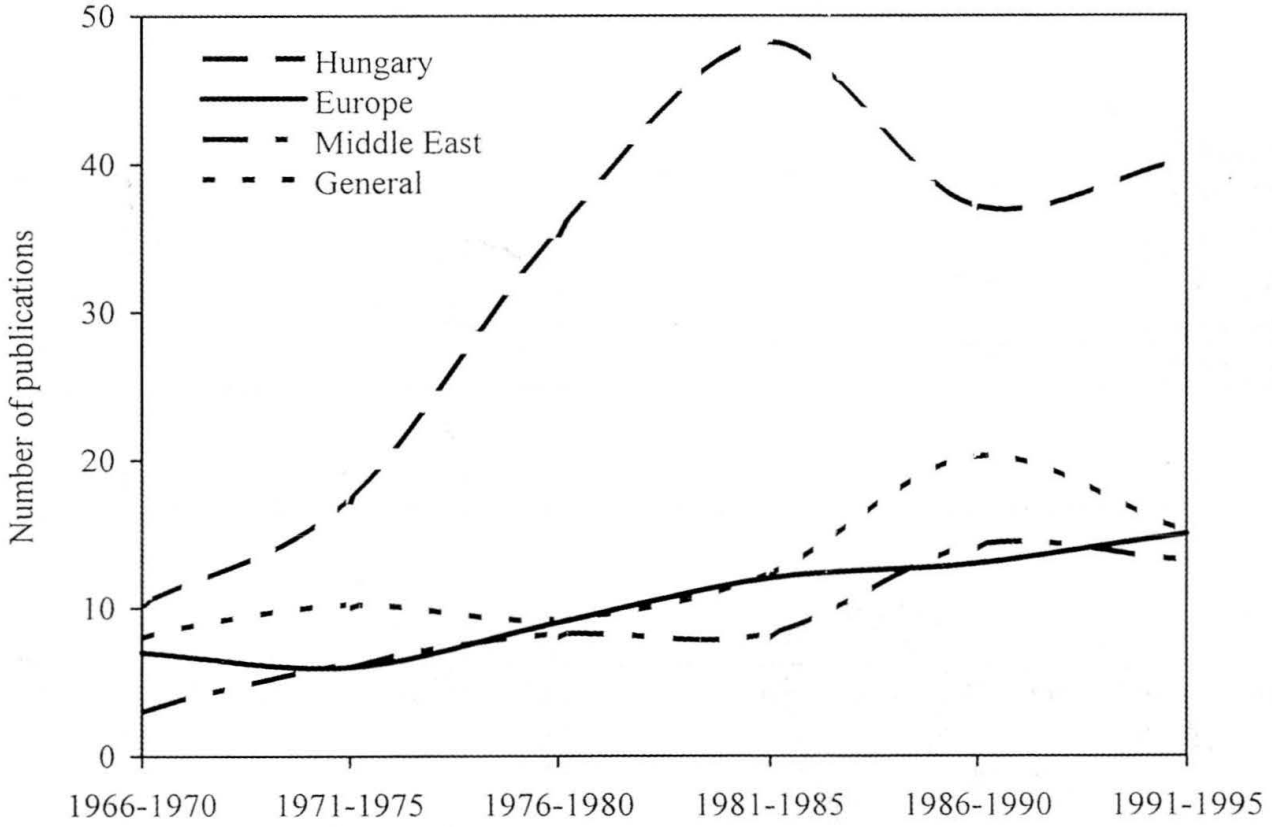

FIGURE 6
The representation of geographical regions in archaeozoological publications.

(Bartosiewicz, 2001: 8). The number of papers discussing Hungarian sites somewhat declined after the late 1980s due to long-term research commitments of Choyke and Bartosiewicz in Switzerland and Belgium respectively which contributed to the slight increase in European topics together with Bökönyi's articles on Italy and the Balkans.

General papers with no regional specification also peaked at the expense of Hungarian site reports which reached a low point during the late 1980's.

LANGUAGES OF PUBLICATION

Modern research is by definition not only multidisciplinary but also international. During the early 1960s, Bökönyi's language skills (German and English) greatly helped him expand his research beyond the borders of Hungary at a time when the country's external contacts were relatively limited and thus only a few Hungarians were motivated enough to invest time, money and effort into language studies.

Figure 7 shows the linguistic composition of the articles published (see also Table 1B). Due to the small number of specialists, publications written in Hungarian have had limited readership. An increase in articles written in Hungarian coincides in part with the first appearance of works by Matolcsi and Vörös during the late 1970s. Publication in Hungarian will become important in strengthening the local position of archaeozoology: currently, archaeologists are being educated in a subject whose Hungarian technical language has not yet been fully developed (Hungarian terms for e. g. "Schlepp effect" and "pot-sizing" have only recently been introduced). It is similarly important that results in our field should be made accessible to the wider public in Hungary.

German was the first foreign language in the pre-war school system, and is still of major importance in Central and Eastern Europe. Many classics in archaeozoology are available only in this language. An increase in Bökönyi's English lan-

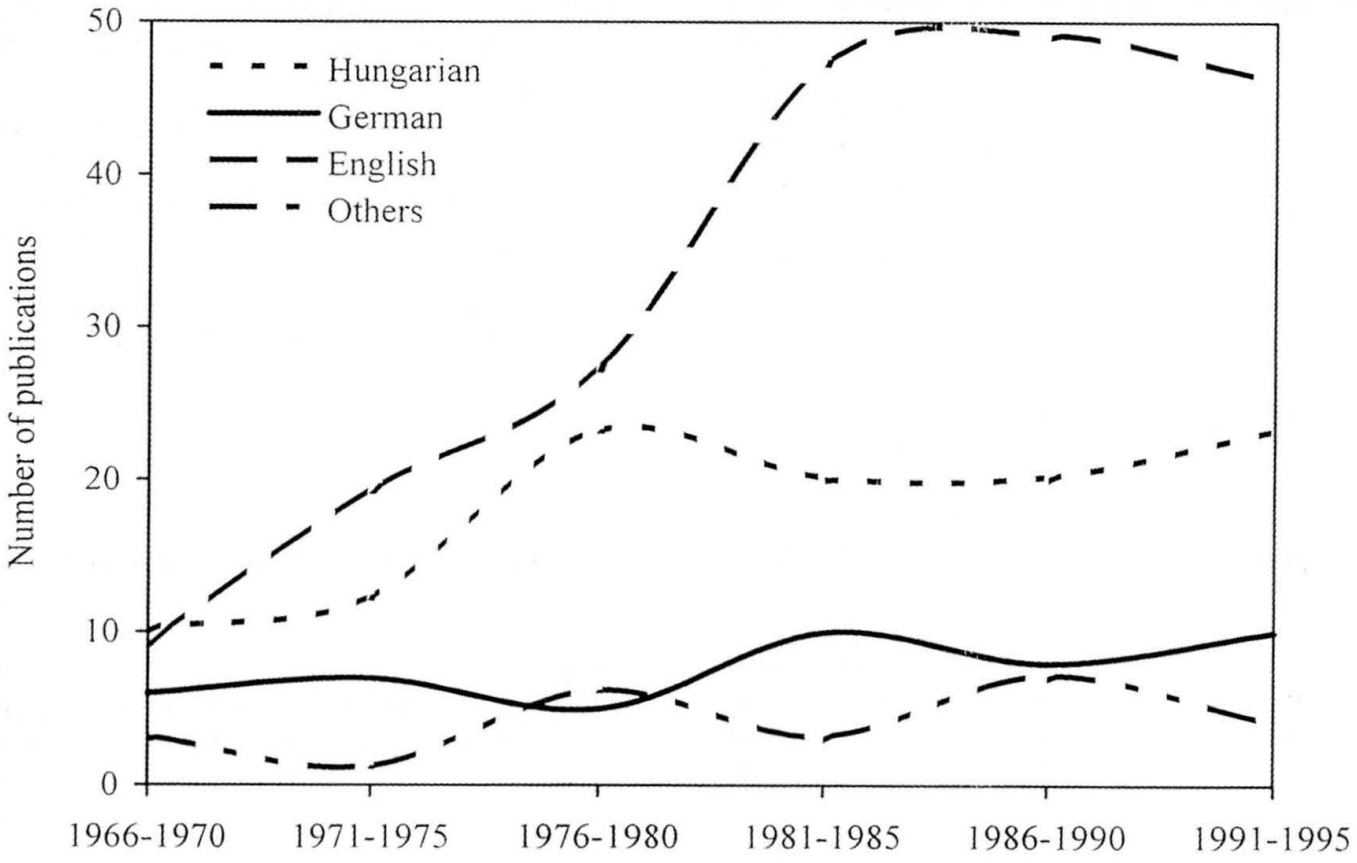

FIGURE 7
The distribution of archaeozoological publications by language.

guage publications from the mid 1960s onwards is in close connection with his prehistoric research, especially in the Middle East (Bartosiewicz, 1998: 13-14, Figures 2 and 3). Meanwhile English has worldwide gained importance as an indispensable research tool, the *lingua franca* of scientific communication.

"Other" languages are represented by sporadic papers in Russian, French and Serbo-Croatian, while the late 1990s saw an increase in reports written in Italian as a "by-product" of the intensive Italian-Hungarian archaeological cooperation that Bökönyi initiated as the director of the Archaeological Institute during the mid 1980's.

Hungarians, having been accustomed to being part of a Finno-Ugric linguistic minority, are not particularly intimidated by what is often looked upon as the "hegemony" of English in scholarly communication: As opposed to world languages, Hungarian has relatively little to lose on this international platform. In principle, however, linguistic diversity is a welcome phenomenon in our country. A pragmatic point made within the context of the 3rd Annual Conference of the European Association of Archaeologists (Ravenna, 1997) is worth quoting here: "*... academia is a market: ideas need to be 'sold' and only have impact if they are put across successfully. If individual speakers are only interested in their national/language community constituency, that is their own problem in the final analysis. We feel most strongly that participants must be free to give scientific papers in the language of their choice (and competence)*" (Tosi *et al.*, 1998: 3).

DISTRIBUTION BY TOPICS

It would have made sense to review chronological changes in the topics studied in Hungarian archaeozoology. Aside from the overall trend of discussing traditional themes such as domestication history and metric variability, papers were devoted to methodological or theoretical subjects only occasionally. Such studies are more characteristic of individual careers than of any part of the time interval between 1965 and 1995.

Archaeozoology, a very narrow field, was cultivated by less than half a dozen scholars in Hungary even during its "tumultuous" heyday during the late 1980s. In fact, in addition to Bökönyi's definitive activity throughout the entire period, individual oscillations would be somewhat difficult to ignore, although the scope and genre of this short paper would not have accommodated personal assessment. Rather a metaphor was chosen to illustrate this problem. The careers of almost all individual authors have largely mirrored the principle of a four stroke engine. This design includes the

– *intake stroke*, when fuel is being built up. In addition to the *learning process*, this step is also characterized by *early work on theory and method* young scholars often attempt before they could have accumulated major bodies of data,

– *compression stroke*, that is analogous to the gradual *concentration of site reports* and other descriptive information that takes a long time,

– *power stroke*, that follows in the form of major discoveries and *comprehensive publications* after synthetic information had been successfully condensed,

– *exhaust stroke*, during which the ideas accumulated are released in a less dynamic form such as *teaching, popular articles* and *project proposals*. The functional importance of this last stage should not be underestimated, even if the production of new data and ideas tends to somewhat decline during this period.

Further expanding the engine metaphor, it must also be pointed out that the greater the number of cylinders, the more smoothly the engine runs, since individual differences in the career cycle complement each other in the overall trend. This is why, the attempted graphic representation by topics showed no noteworthy diachronic differences.

PERSPECTIVES

Bökönyi died at the end of 1994, shortly after the 7th Conference of ICAZ in Konstanz where he gave one of the opening addresses. Meanwhile our "second generation" of post-war archaeozoologists began aging so that the training of new experts became imperative. In 1995, at the end the period under discussion here, the first author was offered a full time position teaching archaeozoology at the Loránd Eötvös University in Budapest. This welcome initiative, coming from *archaeologists*, has created the possibility of increasing the archaeozoological awareness of future archaeologists who will

begin working in the new millennium, and also offers an opportunity for training specialists who will seize the precious few job opportunities in this field. In the spirit of the introduction, this may mean that, while science students will by no means be excluded from the possibility of becoming *archaeozoologists*, a greater pool of archaeology students will be available for the training and selection of *zooarchaeologists* in Hungary.

Bandwagons come and go, but the culture historical interpretation of ceramic styles has still been the most popular of all of them in Hungarian archaeology. The epic interpretation of animal remains can be conveniently integrated within this pre-processual picture. Therefore, the contradictory role of faunal analyses, especially in post-processual archaeology (Beech, 1983) and tensions between archaeozoologists and cognitive processualists (O'Connor, 1996: 15) have not yet appeared in the complete absence of the latter in Hungary. The future role of archaeozoology therefore must be viewed in terms of its feedback effect on local archaeological thought and increasing integration with progressive trends in that discipline. Meanwhile, challenges of costly technical development (e.g. AMS dating, dietary reconstruction with isotopes, DNA identification) will also have to be met to make sure that a new generation of Hungarian archaeozoologists can keep up with international standards of its own discipline.

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