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Ecological Anthropological Research in Hungary

Foreword

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Ecological anthropology in Hungary was never studied on such a broad scale and as systematically as it was in the English speaking countries. The theoretical and methodological issues of this discipline were covered more in details [beside a couple of papers by Mihály Sárkány, a man interested in and open to all and any theoretical problems of anthropology (Sárkány 1979; 1984–85)] primarily by Balázs Borsos, one of the guest editors of this volume, who also contributed to the appearance of ecological anthropology – in the sense it is understood in the English speaking world – at the universities in Hungary.[1] At the same time, ecological issues, the relations between the natural environment and human culture raised the interest of many Hungarian research scientists, and there are problem areas (for instance flood plain management, eco-villages, ethnobotany), – even though no schools of thought were inspired by them – which were and are subject to a broad scale discussion. For all these reasons, in the following a restriction on the expounding of a mere outline should be exercised not only due to limited scope herein, but also as a result of the fragmentary nature of the available information, when taking account of the research practices of environmental issues in Hungarian ethnography and border areas without claiming completeness.

Just as in the international arena, the methodology called cultural ecology by Steward was the trigger opening up research dealing with the connections of natural environment and culture in the Hungarian landscape. The professor in Debrecen, who has always been very responsive to the anthropology of the English speaking countries, Béla Gunda set off in several of his articles in the wake of Steward. However, while natural environment was in the focus when he studied ancient crops (Gunda 1983), in other works, such as Nomads providing services (1981) or the 'cultural ecology' of an implement, the rake (1992) the choice of the title is more of a catch phrase. As Mihály Sárkány put it: 'Béla Gunda suggested an application of the cultural ecology concept in which you can not really follow him.' (Sárkány 1997:430–431). However, the impact exerted by Steward still lingers on: Gyula Viga (1995) for instance investigated the landscape transforming

[1] Ecological anthropology was introduced as an independent subject both in basic training programmes and master courses (Budapest, Miskolc), as well as in doctoral schools (Budapest, Szeged)

impact of society in relation to cultural ecology, while János Bali maintained that the cultural core theory introduced by Steward was an appropriate framework for analysis in his monograph (Bali 2005a) written on the raspberry farmers in country Nógrád (Bali 2005b:13–14; 21; 40). The Steward effect could have arrived through North-European mediation just as well: in fact, Bali defined the farming method called the eco-type of the mountain peasant with the help of the definitions found in the works of Bjarne Stocklund (1976), and Orvar Löfgren (1976), both inspired by Steward (Bali 2005b:15–18).[2]

Of all disciplines related to ecological anthropology, historical ecology might be the one which affected Hungarian academia most. Research topics with an emphasis on natural factors and the knowledge of the people about their natural environment (such as foraging, fishing, land-use and management, pastoralism, settlement history etc.) can be found in the works of the forerunners of the discipline as early as between the two world wars [among others István Ecsedi (1934), Sándor Gönyey (1925), István Györffy (1939) etc.]. Several ethnographers were engaged in the transformation of the natural environment throughout human history upon the cultural impacts: it is quite possible that the underlying cause was the predominantly historical approach of Hungarian ethnography or the European parallels. Such work was accomplished for instance – focused mainly on the transformation of the landscape by man – by László Kósa (1982) and – listening to the permanent disruption of the ecological equilibrium of traditional natural environment by husbandry – by Nándor Ikvai (1991) as well. The investigation of natural calamities and their consequences is also an integral part of the oeuvre of Kósa (Kósa 2009; 2014). The role of environmental factors in traditional cultures were studied among others by Bertalan Andrásfalvy (1975; 2007; 2013), János Bárth (1974) Tibor Bellon (2003), Imre Hegyi (1978), László Mód (2016), Miklós Szilágyi (1999), Károly Takács (2000), Lajos Takács (1978; 1980) and Gyula Viga (1995; 2011).[3] Before the 'official establishment' of historical ecology (1986, see R.Várkonyi 1992:32), primarily it was the practitioners of historical geography who paid attention to the continuously changing co-existence of land and man beside ethnographers (for instance Somogyi 1984; Frisnyák 1990). However, once the 'youngest discipline of science' took off, it was not only historians (Dóka 1995; Réfi Oszkó 1997; R. Várkonyi 1992), but archaeologists (Laszlovszky – Kiss 2013; Pálóczi Horváth 2004), geographers (Ilyés 2007; Rácz 1999; 2013; Sümegi 1998) and geologists (Kázmér 2009b) as well who studied the changes in natural environment and the connections between culture and environment throughout history and before. A number of essay collections were also dedicated to this topic (see for instance Andrásfalvy – Vargyas 2009; Kázmér 2009a; 2011; Laszlovszky – Szabó 2003; R. Várkonyi – Kósa 1993; Sümegi 2014).

Of the issues which environmental history is concerned with in Hungary – maybe due to the low lying, landlocked country and the natural environment determined by the rivers – most probably the topic of flood plain economy ('fok' husbandry) received most attention, therefore it might be worth to discuss this question a little bit more in depth. Man has always made efforts to adapt to floods in husbandry, turning the tide to good use, whenever possible. Fluctuations in water flow of the rivers had to be monitored

[2] The term eco-type is severely critised by one of the authors of this paper (Bali 2005b:15, quotes the review on his doctoral thesis).

[3] Mainly more lengthy, more recent and English publications were included.

and incidental inundation of the flood plain prevented. In the views held by Bertalan Andrásfalvy (1975:15–18) flood plain economy was based just on letting floods flowing across canals, the '*foks*' between the river and certain parts of the flood plain to the deeper lying parts, and after the subsidence of the flood it was let back to the river the same way. Miklós Szilágyi holds the view that floodplain management was a complex form of husbandry taking advantage of the water periodically inundating the land along the river (Szilágyi 2008:14), just like Gyula Viga, who claims that it was a collection of various forms of husbandry before the river regulation works and he praises its multilateral approach and the diversity of the different uses (Viga 2009:375). However, the concept of floodplain management provided a number of other interpretations, some of them quite extreme. On one hand, a theory holds that '*fok*' management was a characteristic form of land use, any time typical for all settlements of the Hungarians associated with the river, insisting that it was a conscious and systemised practice (Molnár 1991–94), while on the other, some think that fok management has never existed at all (Deák 2001). However, Andrásfalvy cites a high number of archive data from the Sárköz area which actually all deal with the preparation and maintenance of *foks* (Andrásfalvy 1975:159–231; 2007:153–216). Since the land along the rivers has always been a primary area of occupation ever since the original settlement of the Magyars in Hungary, they were compelled to adapt to its changing environment.

Floodplain management was touched upon on the pages of the most recent large summarising work of environmental history (Horváth 2014), where cultural historian and archivist, economist and historian, and archaeologist and ethnographer describe their relevant research findings. The latter, Gábor Máté is the second from the trade after János Bali who extends the scope of his investigation to the mountain ranges (in his case this meaning the Mecsek-country), instead of the management practices along the river, which is considered to be a typical Hungarian characteristic. Even though in this present paper priority is given to the second half of the 20th century (Máté 2014), in his doctoral thesis he puts particularly great emphasis on the environmental changes caused by the Ottoman occupation (Máté 2013). The basically young team of authors in the volume indicates that environmental history continues to be an important realm of Hungarian humanities. Both environmental history related to floodplain economy and the system-ecological approach hallmarked by the name of Roy Rappaport are characteristic features of the work studying the transformation of husbandry methods in the Bodrogköz, which highlights the dynamic component of the ecosystem concept and makes an attempt to draw conclusions by cartographic, statistical and mathematical analysis of eight variables (ranging from relative relief up to soil types) (Borsos 1995; 2000; 2003; 2009).

The main body of the army is also constituted by young research scientists in the case of the two major research units, which approach some of the partial areas of ecological anthropology described above most. Spiritual ecology[4] and 'movement' ecology are both affected when it comes to the research of the eco-village movement, enjoying a substantial

[4] Even though it seems according to its title, the work by Elek Bartha entitled Religious ecology (*Vallásökológia. Szakrális ökoszisztémák szerveződése és működése a népi vallásosságban. Religious ecology. Sacred eco-system organisation and operation in folk religiousness.* 1992, Debrecen: Ethnica.) does not belong to this line of thought in terms of its contents (use of space by religions), which is also an example to the inadequate use of the term ecology, beside certain works of Gunda.

amount of popularity in Hungary. A summary of this trend can be found in the thematic issue of *Néprajzi Látóhatár* (Ethnographic Horizon), where both the spiritual aspects (the study of the Krishna valley dwellers: Farkas 2013; Giczi 2013; Varga 2013), and the movement aspects (the views of eco-villagers from Nagyszékely to Visnyeszéplak) are represented. A monograph and several studies deal with the analysis of the conceptual framework and implementation of the probably best known eco-village, Gyűrűfű, written by one of the founders, Béla Borsos (Borsos 2009; 2013; 2016).

Cognitive anthropology, ethno-ecology, ethno-botany, and ethno-zoology, the research of sustainable resource-management (extensive land use practices) thrive from the 2000s on and became the most vivid branches of ecological anthropological research both internationally and domestically. Therefore, it makes sense to have a look at the basic concepts in a wider, international context.

The complex relationship of man, society and the natural environment, furthermore the traditional ecological knowledge (TEK) constitute the subject matter of ethnobiological (ethno-botanical, ethno-zoological and ethno-ecological) research (Borsos 2004:82). The ecological knowledge, experiences of local communities related to wildlife, plants and animals, natural resource management and land use pattern directly dependent on the benefits of the natural environment (ecosystem services) are in the focus of such studies.

Traditional ecological knowledge (TEK) is a term reserved for the triplet of knowledge obtained from the older generations, personal experiences and the convictions of the belief system (Berkes 2008:7). This ecological knowledge is a complex set of pieces of information underlying the decision making on land use methods in communities which are in direct relations with nature and which exploit the benefits (resources) of nature in this manner (Menzies – Butler 2006:1–2). The ecological knowledge system embedded in the social (cultural) and natural environment (Pearce et al. 2011:282) contains information related to species (e.g. Berlin et al. 1981), needs of species in terms of habitats assist in effective identification of natural resources (Johnson – Hunn 2010a). This knowledge extends not only on the site specific needs of important plant species and habitats of animals, but the vegetation or population dynamic processes of the key habitats just as well (Johnson – Hunn 2010a; Meilleur 2010; Moller et al. 2004:2). Multidimensional landscape partition set up with the use of several features divides the landscape up into overlapping spots of various habitat types – this is landscape ethnoecology (Fleck – Harder 2000; Johnson – Hunn 2010b; Shepard et al. 2001). Recognition of the repetitive, recurrent patterns helps more effective identification of natural resources (Johnson – Hunn 2010b).

This way the traditional ecological knowledge may readily contribute to discover new species in scientific terms (Diamond – Bishop 1999), it can reveal new floristic and faunistic particulars, giving information on new populations of rare species (Molnár – Babai 2009:125; Molnár et al. 2017) just as well, as the size of populations of and trends in populations of elusive species (Gadgil et al. 2003). It may also assist and facilitate monitoring key state indicators of the environment, the development of efficient and sustainable management plans (Bonta 2010; Gadgil et al. 2003; Gilchrist et al. 2005; Huntington 2000:1272–1273; Moller et al. 2004:2; Roba – Oba 2009a; 2009b). The up to date state of such information is ensured by the elimination of elements which become obsolete as the environment changes, and by the incorporation of new experiences gained by each generation (Menzies – Butler 2006:7). The transfer of dynamically changing

knowledge is shaped by culturally controlled mechanisms (learning and experiencing processes – imitation and observation). Unfortunately, cultural support to these mechanisms are undermined by changing lifestyles and the resulting processes ending up in cultural losses (acculturation) (Godoy et al. 2009; Ohmagari – Berkes 1997:199; Pearce et al. 2011:278; Reyes-Garcia et al. 2007:376–377; 2014). The global economic and social processes underlying the lifestyle changes and acculturation also weaken the social norms (voluntarily assumed self-restrictions) which might have easily ensured sustainable use of natural resources for centuries just as well (Colding – Folke 2001; Johannes 2002; Molnár et al. 2015). As a consequence of these processes which are definitely unfavourable from the perspective of ecology and sustainability the traditional ecological knowledge and extensive land use built mainly on it (relying primarily on human labour) is eroded (Reyes-Garcia et al. 2007). Therefore, ethnobiological research is inspired not only by the wish and desire to learn and document a wealth of knowledge which has developed independently from the scientific endeavour. Such research also makes an attempt to provide an answer to the challenges of the ecological and environmental crisis, which has become a central topic of the 20th century (Berkes et al. 2000:1252; Huntington 2000:1273, Turner et al. 2000:1284).

The purpose of the traditional ecological knowledge and the extensive land use systems is to ensure the natural resources essential for the community and to increase the predictability of their yields. The landscape is formed by the activities of resource management, including its vegetation and wildlife, and operate a wide range of ecological processes in the landscape. While primarily ensuring the survival of the local community, land use also sets specific, diverse habitats for many plant and animal species – this is the cultural landscape (Agnoletti 2007; Fuller et al. 2017; Plieninger et al. 2006; Poschlod et al. 1998). Biological diversity secures the adaptivity of the landscape and of the ecosystem functions, a better adaptive potential to react to changes (Gadgil et al. 2003) thus ensuring common, system level survival of both local community and the diverse living world (Berkes et al. 2003).

However, cultural landscapes, representing high aesthetic, cultural and natural values alike, have been quickly degraded with the disappearance of traditional land use (intensification on one hand and abandonment on the other) due to the urbanisation processes (Agnoletti 2014:68–71; Antrop 2005:26–27; MacDonald et al. 2000). Cultural landscapes and traditional, small-holding farming have survived up to date mainly in the marginal regions of Central and Eastern Europe (Sutcliffe et al. 2014:1; Tudor 2015:29). However, social and economic processes (lifestyle change) result in the rapid suppression and disappearance of extensive (labour-intensive) land use systems in these regions as well (Demeter – Kelemen 2012; Dorresteijn et al. 2015:28-29; Schmitt – Rákosy 2007:859).

In such a situation, the assessment of extensive land use system shaping the cultural landscape and wise, frugal management of natural resources as well as their principles and practices from the ecological perspective has been marked up thoroughly (Babai et al. 2015; Molnár et al. 2008). With the elimination of traditional land use practices and degradation of cultural landscapes the knowledge and experience related to such extensive land use systems vanished just as well (Ohmagari – Berkes 1997; Reyes-Garcia et al. 2014:169; Varga et al. 2016), which is a great loss to community, landscape and conservation efforts alike (Berkes et al. 2000). This lack of information provides

the practical significance to ethnobiological and ethnoecological research documenting the intellectual and cultural heritage, since such studies reveal the sustainable resource management systems, allowing an opportunity to integrate traditional and scientific knowledge and to exercise common thinking (knowledge-coproduction) (Armitage et al. 2011). Such a cooperation forms the management and farming practices with the involvement of the local community, which, in turn, may be very useful in preserving natural and cultural values and biocultural diversity (Maffi 2001; Mascia et al. 2003:649). The final result is a cooperation which benefits the local community and the scientist (as well as the conservationist) as well, providing a livelihood to the local community, serving sustainable management of natural resources, and also securing the conservation of natural and cultural values (Hunn 2007). Such a cooperation might also result sometimes in publications written jointly by scientists and locals (e.g. earlier Majnep – Bulmer 1977; more recently in Hungary by Molnár et al. 2016).

In terms of research into traditional ecological knowledge and land use the European continent can be regarded as poorly represented. The reason for this is the most researchers find it difficult to think that folk or local ecological knowledge developed and maintained independently from the scientific endeavour could possibly survive up to date in a continent where book printing is known for more than five centuries and herbalist manuals continuing to be published since the 16th century shape local knowledge related to medicinal plants. István Györffy formulated this thought in the middle of the 20th century as follows: "educated man mostly does not want to believe in the first place that there is any vernacular knowledge which did not descend to the people from abroad but was produced by the people themselves or which is preserved by them as an ancient tradition" (Györffy 1939:45).

Even though you can hardly believe it, traditional ecological knowledge is present mainly in the marginal regions of South, Central and Eastern Europe up to date. A significant part of traditional land use systems and related traditional ecological knowledge vanished from Western Europe during the dramatic economic transformation following World War II (for instance the development of ski tourism in mountain areas) (MacDonald et al. 2000; Meilleur 1986:22; Niedrist et al. 2009:195–196; Poschlod – Wallis de Vries 2002). However, this knowledge survived up to the 21st century in Central, Eastern and Southern Europe, even though it is functional in an ever lesser geographic area. Research puts the knowledge of healing herbs and edible wild plants in the foreground (e.g. wild edible plants: Dolina – Łuczaj 2014; Łuczaj et al. 2013; Nedelcheva 2013; medicinal plants: Mustafa et al. 2012; Pieroni et al. 2011; 2014).

On the other hand, a lot less research deals with traditional ecological knowledge in the narrower sense. Ecological knowledge is explored mainly in the context of extensive land use, mostly in marginal, mountainous areas. The small-scale farming and characteristics of animal husbandry in the Europe high mountain ranges are well documented in Western Europe as well (France: Meilleur 1986; Switzerland: Netting 1981; more recently in Austria: Glasenapp – Thornton 2011), yet there are hardly any data valuable on the knowledge about sites and habitats (Alps: Meilleur 1986; 2010; Nordic countries: Roturier – Roué 2009).

Turning our attention from the European situation to the Carpathian Basin it can be stated that there are great traditions of the research of classical ethnobotanical topics related to traditional ecological knowledge (e.g. medicinal plants). These studies related

to medicinal and wild edible plants have become more popular first in the 1970s when the various voluntary ethnographical movements (e.g. *Csodabab, Ezerjófű*) encouraged basic data-collection (Szabó – Péntek 1976; the key results were published e.g. in Gub 1996a; Kóczián 1984; 1988; 2014; Kóczián et al. 1975; 1976; Rab et al. 1981). Nowadays the increased importance of food safety and the growing demand for eating healthy food and for using natural medicines reinforces the interest for ethno-botany is practiced by Hungarian professionals belonging to other research areas as well [for instance, Nóra Papp and her team from the Pharmacognostic Institute at the University of Pécs (2014)] or from abroad [for instance János Péntek and fellow workers (2004)] (wild edible plants, mushrooms: e.g. Dénes et al. 2012; Zsigmond 2011; in human medicine: Halász 2010; 2011; Papp et al. 2014; ethno-veterinarian research: Bartha et al. 2015).

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The voluntary ethnographical movements encouraging acquaintance with traditional ecological knowledge on plants did not give any impetus to learn about knowledge on wild animals. There is only a few regions in the Carpathian Basin where local knowledge of animals is properly researched and explored. Local names and a few properties of vertebrate animals are known from the Upper-Szigetköz (Kovács 1987), and the names of vertebrate species and folkloristic phenomena associated with them (for instance, guessing games) have been described from the Salt Country (Sóvidék) (Gub 1996b). Additionally, many ethnographic works hide valuable and interesting ethnozoological references. The monograph by Imre Hegyi on forest use in the Bakony can be mentioned as an example, mentioning in a few lines the use of the forest maybeetle (*Melolontha melolontha*) to feed pigs and poultry (Hegyi 1978:191). These days ethnozoological research efforts have ran up again (e.g. Kicsi 2015; Gyimes (Ghyimeş): Babai 2011; Kalotaszeg: Gránicz 2015; Gömör (Gemer), Drávaszög (Baranja), Szilágyság (Sălaj), Moldva: Ulicsni 2012; Babai et al. 2016). Attention is now given to invertebrate species (Ulicsni et al. 2016), and local perception of animals (Ulicsni et al. in this volume), which rely frequently on exaggerating belief-type narratives which are built on a mentally built up knowledge system and can be observed quite frequently in relation to the animal kingdom (cf. Lammel 1999:312–313).

Almost all corners of the Carpathian Basin bear the impressions of land use – they are all cultural landscapes, the development and maintenance of which assumes deep ecological knowledge not only about plant and animal species, but about natural environment and habitats as well. Studies of this ecological knowledge and understanding is revived mainly through the work of the botanist Zsolt Molnár, his disciples and follow-

researchers. These studies, which initially covered mainly the Hortobágy (Molnár 2012a) and Gyimes (Babai et al 2014) are now extended to encompass the Mura-country, Partium–Mezőség, Middle-Transylvania and other regions, investigating wood pastures (Varga – Molnár 2014) and Eastern counterparts on the Mongolian steppes of the grasslands in the Hortobágy (Avar 2014).

Research of this ecological knowledge about habitats was started in the Carpathian Basin by the determination of geographic place-names carrying botanical meaning (Kalotaszeg: Péntek – Szabó 1985:34–42, Gyergyó Basin: Rab 2001). Beside studies focusing on landscape-partitioning, land use, and knowledge of vegetation dynamics (Hortobágy: Molnár 2012a; 2012b; Gyimes: Babai – Molnár 2009; 2013). Research projects focusing on general development or maintaining of cultural landscapes or a single habitat have also become more common. Studies dealing with wood pastures, representing significant aesthetic, cultural and natural values alike (Hartel – Plieninger 2015; Varga – Molnár 2014), typical Pannonian habitats, alkali grasslands on the flats of Tiszántúl (Molnár 2012b) and seminatural, mountain hay meadows (e.g. Babai – Molnár 2014; Babai et al. 2014) can be highlighted from this trend. Forests as important natural resources have played a significant role in classical ethnographic research as well (e.g. Woitsch 2011), and their ecologically sustainable use was a key issue from the perspective of the Székely village communities (based on works of Imreh 1973; 1983: Molnár et al. 2015), while today short term material gains overwrite the centuries old principles applicable to the use of forests.

This knowledge is available in a few communities of the Carpathian Basin which carry the traditional lifestyle for historical, geographic, ecological or economic reasons, but fragments and memories occur everywhere else just as well. Maybe the multifaceted investigation of this knowledge will never end up in a specific Hungarian ecological anthropological school, yet due to the involvement of young scholars in the work there is good reason to believe that these research projects will enrich the realm of Hungarian and universal science with a number of interesting and important findings.

The writings in this volume, as a snapshot of the interdisciplinary research of traditional ecological knowledge in the Carpathian Basin intend to illustrate the diversity of research projects accomplished by domestic ethno-biological and ethno-ecological workshops, introducing the multifaceted and wide ranging research work, touching upon a number of different topics, which are being carried out in this scientific field these days in academia, research institutes and universities.

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