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MENTAL HERBALS – A CONTEXT-SENSITIVE WAY OF LOOKING AT LOCAL ETHNOBOTANICAL KNOWLEDGE: EXAMPLES FROM BUKOVINA (ROMANIA)

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Abstract. Since Local Environmental Knowledge (LEK) stems from numerous sources and is learned and transmitted variously, it is highly heterogeneous. One of the reasons for its heterogeneity is a fact that transmission routes and patterns depend mainly on different sources, such as personal experience, influence of others as well as books and media. The objective of this article is to show how useful the idea of *mental herbal* might be in deep, complex and contextualized description of heterogeneous structure of LEK on the example of Polish minority members in a village Pojana Miculi (Rom. Poiana Micului) – South Bukovina, Romania. The whole body of skills, practice and knowledge of plants held by a particular person is defined here as the *mental herbal*. *Mental herbal* approach implies focusing on the particular holders of LEK – their stories, perceptions, everyday practices, considering the environment, and the context, in which LEK functions.

Keywords: local environmental knowledge, mental herbals, heterogeneity of knowledge, Polish minority, Bukovina, Romania

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1. Background

Each type of Traditional Knowledge or Local Knowledge consists not only of information as such but also perceptions, beliefs, skills, everyday practices, stories etc., so it is holistic. Therefore, it should not only be described as a particular content (list of species used e.g. pharmacopoeia), but as a contextualized knowledge system (Reyes-García 2010).

The whole body of skills, practice and knowledge of plants, held by a particular person is defined here as *mental herbal*. Every plant that is important, remembered, embodied or even imagined by an individual constitutes an element of his/her *mental herbal*. Hence the entire context, in which these plants are embedded (knowledge of uses, feelings associated with them, beliefs, stories etc.)

is crucial for each *mental herbal*. However the adjective *mental* should not suggest that herbal is localized only in holders' heads, and that it is not just limited to minds, emotions and imagination, because it is embodied also in their bodies, gained through all of their senses (Kołodziejska-Degórska 2008b).[1]

In order to describe *mental herbals* of Pojana Mikuli inhabitants I use the term Local Environmental Knowledge (LEK) instead of Traditional Environmental Knowledge (TEK). Since the latter is defined often as "cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relation of living beings (including human) with one another and with their environment" (Berkes, et al. 2000). Hence it should be present in the community for more than one generation and be adaptive. Those two criteria are not always met by the way I describe knowledge of participants of the research. As Nadasdy stated, cultural practice, ways of life or world view have never been static and the change does not imply 'inauthenticity' (Nadasdy 1999). Therefore the use of new species, while the logical frame of knowledge stays unchanged, should not exclude those species, practices, beliefs etc. from the body of TEK. Nevertheless acknowledging this definitional nuance I use the term LEK as I was interested in actual knowledge – with all its aspects, including contemporary inclusions and the ways it functions in the everyday life of the community.

Timo Karjalainen and Joachim Habeck see LEK as built on two levels: hands-on experience through engagement with the surroundings ('environment perception') and thanks to different communication forms – outside the context of everyday life ('environmental knowledge') (Karjalainen and Habeck 2004)[2] I find this division very useful in understanding the LEK generation in Pojana Mikuli.

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[1] Some similarities between my term *mental herbal* and Renata Sõukand's term "herbal landscape" may be found (Sõukand and Kalle 2010a). They are both attempts to describe an individual perception of environment (understood according to Tim Ingold (2000)) and to stress this individuality, as well as the importance of various senses in this perception. But "herbal landscape" is very localized, connected with the perception of plants within its surroundings. *Mental herbals* are in people's heads and bodies, so individual plant collections stored at homes, ornamental plants at home and in the garden etc. are included in *mental herbals*. I try not to impose a category of medicinal plants. 'Herbal landscape' was developed as a research tool for ethnopharmacological knowledge – "explaining mechanisms of the use of medicinal plants and its changes over time" (Sõukand 2010b). Theoretical basis for 'herbal landscape' is rooted in semiotics and defined as a 'cognitive field'. *Mental herbal* is more concerned about personal attitudes towards plants, embodied and not fully embodied knowledge and its transmission routes. Moreover, it includes all plants which are important for its holder, not only those with curing or disease-preventing properties (Sõukand and Kalle 2012). Theoretical-philosophical inspirations for *mental herbals* are derived mainly from phenomenology and much less connected to cognitive sciences. There is no one *mental herbal* for the community, each member has his/her own *herbal*.

[2] Compare with Tim Ingold's 'enskilment' and 'enculturation' (2000). In my opinion Local Environmental Knowledge is both embodied and has more cognitive character as it includes embodied skills and the information people acquire for example from books. Not all the knowledge gained in the process of reading the book stays just "information", it may be embodied through practice, but not necessarily.

Nowadays in Bukovina (as in other parts of Europe) an individual has an access to various sources of information, hence interplay of his/her environmental knowledge and environment perception gives LEK heterogeneous character. Due to the above-mentioned features of LEK, each attempt to describe it causes some loss in its complexity and to some extent its decontextualization. *Mental herbals* approach gives an opportunity to characterise LEK as embedded in social networks and individual experience of its specific holders.

During the research I have refrained from imposing *etic* categories. Therefore I asked the participants for the whole diversity of plants important for them instead of focusing on one plant knowledge domain. Such an approach emphasizes intermingling of plants' knowledge domains usually artificially separated in the ethnobotanical analysis, though it is generally accepted that those categories are mixed (Pieroni and Quave 2006)[3]. During the analysis it might be useful to extract them, but it is good to have a broader picture while collecting the data, as in that way it is easier to be context-sensitive.

2. Methods

For *mental herbals* description, many hours of informal interviews and observations (participant and non-participant) reported in field notes were used, plus additionally 27 tape-recorded semi-structured interviews[4] with villagers were conducted. Informal interviews and both types of observation were carried out during everyday practices of Pojana Mikuli inhabitants, such as cooking, haymaking, picking mushrooms, digging potatoes or herding cattle. I took part in numerous events important for villagers, for example the Polish Days organized by the Union of Poles in Romania[5], funerals, religious holidays such as the Assumption of Virgin Mary, Christmas celebrations etc. The floristic research methods were employed for plants determination and voucher specimen collection.

The greater the *mental herbal*, the more difficult it is to describe it fully. Hence, it was important for me to include in both the description and the analysis the plants which were most significant for the holder of particular *herbal*. That is why I refrained from showing to people any form of plants (growing, dried, photographs etc.). I waited for participants of the study to show me which plants were vital for them in the context of their everyday activities. Therefore it was necessary to be in the village during different seasons and to take part in various seasonal activities (Martin 2004). However, it does not mean that we were talking about plants without experiencing them. The participants used to show me plants

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[3] Nevertheless one has to bear in mind that such separation and *etic* categorization in many research designs is inevitable.

[4] Transcribed interviews are deposited at the Institute of Ethnology and Cultural Anthropology University of Warsaw.

[5] Związek Polaków w Rumunii, Uniunea Polonezilor din România.

in their gardens, on windowsills, in the meadows and forest, as well as from their dried plant collections. Such means enabled me to get to know an individual's *herbal* and determine core plants – particularly significant for the holder.

2.1. Studied community

According to the National Census in 2002, 3559[6] people declared themselves as Poles living in Romania, the majority of them in Bukovina (mountainous region in the northeast part of the country) (National Romanian Census 2002). The examples in the text consider Bukovinian village near Gura Humorului – Pojana Mikuli (Poiana Micului). According to the church inventory there were 619 parish members living in 150 households in 2005 [personal information from priest Alfons Zielonka – parish rector in 2005–2006]. The Poles who came to Bukovina migrated within the borders of one country – the Austro-Hungarian Empire. At that time the villages they came from (in southern regions of contemporary Poland) and the ones they migrated to were parts of the same country. Some of them were salt mine industry workers while others were peasants – economic migrants looking for a better life. Pojana Mikuli inhabitants are descendants of the economic migrants (Mamulska 2000). Before the Second World War Pojana Mikuli was half Polish and half German with one Catholic church in the middle of the village (the upper part was German, and the lower Polish). Today it is half Romanian, half Polish with two churches – one Orthodox and one Catholic. There are also two schools in the 8-km long village – a Romanian and a Polish. Although good and close inter-ethnic relations are essential to the discourse about Bukovina (Feleszko et al. 1995), it seems to me that these two national communities are quite separated. From both old and young Polish inhabitants one can often hear: "I don't go to the Romanian part, I don't have friends there, I've been there maybe once". When Polish minority members hitchhike from the nearest town back home they would rather not wave at the cars from the upper part. They prefer to wait until someone from their part of the village comes. One of the elements that has an impact on social-networks of the inhabitants, apart from national and confessional identity, is the length of the village, which is seen as a contact limiting factor.

After the Second World War there has been a significant return migration movement, the majority of the people in Pojana Mikuli have close relatives in Poland[7]. During the study period many inhabitants of Pojana Mikuli migrated to work in western countries – mainly Spain, Italy and Germany. In almost every household there were members of families who were abroad or just came back from seasonal work there.

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[6] The leaders of the Union of Poles in Romania do not agree with those numbers, they think they should be doubled (personal communication Gerwazy Longer, ("Związek Polaków w Rumunii, Uniunea Polonezilor din România" n.d.)).

[7] Some of them have relatives who felt Slovak, not Polish – and migrated to Czechoslovakia. The question of Polish versus Slovak nationality was very important at that time. Families were split because of this identity problem. According to some members of the community and some researchers this problem was induced by agitation and a kind of indoctrination (Mamulska 2000).

In the years 2005–2007 when the research was conducted there were about 260 households in the village, a bit more than half of them were inhabited by the Polish minority. There are two main languages spoken in the village – Romanian and a local Polish dialect. All my interlocutors spoke Polish dialect, but not all of them were fluent speakers of Romanian. Nevertheless, knowledge of both Polish and Romanian has been very helpful during the fieldwork, as there are many Romanian words in the local dialect of Polish minority.

The use of domestic and wild plants – mainly herbs – proved to be a vital part of everyday life of people. Non-specialist knowledge about plants is widely spread among villagers. Discussions on plants, concerning their use or characteristics can easily be overheard in the village. Situations in which a person suggests the use of a plant remedy for some health problem are typical.

2.2. Interlocutors

As the objective of the research was to show how local plant knowledge functions in the everyday family and neighbourhood relations, all interlocutors were lay persons used plant knowledge for domestic purposes. Various age groups were included in the research. *Mental herbals* analysis is based on information obtained from villagers 9 to 86 years old. Due to the fact that in the studied community the knowledge of plants is rather perceived as a feminine domain, mainly women were interested in taking part in the research. Among those who agreed on semi-structured interviews were only 7 men out of 27 interviewees. The majority of men who were asked to participate in the research suggested their wives or mothers instead. Undoubtedly, my gender also influenced their suggestions. Distances in that quite a long village are perceived as contact-limiting, which is important for knowledge transmission. That is why I started a snowball sampling in three different points in the Polish part of the village (at the 1st, 2.5 and 3.5 kilometre – these were points of higher population density). For discussion on the snowball sampling method in anthropological research, see Mario Luis Small (Small 2009).

3. *Mental herbals* – results and discussion

3.1. General features of mental herbals

In order to show the complexity and contextualization of LK I focused on the particular holders of this knowledge. The holistic approach to one's knowledge (including some domains of his/her plant knowledge) enables us to show an overall shape of this knowledge, general interests and the keys for specific plant choices. I have included in the description and analysis the plants, which were most significant for the holder of a particular *herbal*. Hence there were only few plants present in all of the studied *herbals*. Those not present in the collected data, concerning one's *mental herbal* may appear in the *herbal* itself, but as less conspicuous, less important to the holder in general or at the particular moment (time during the year etc.).

Nevertheless, only in very specific situations plants 'sticking out' from the *herbals* are not on the first pages of the *herbal*. *Mental herbals* are not static; they are changing with people get older, modify their interests, become less mobile, get to know new plants, become a specialist in some domain, etc.

Two plant parts present in all of the studied *herbals* were lime tree flowers (mainly *Tilia cordata;* ***lipa***)[8] and caraway fruit (*Carum carvi;* ***kmin, kminek***). They are widely used because of few features, but only one was common for all the *herbals* – tea for daily drinking. Teas (***harbaty***) constitute a highly important category in *mental herbals* of all the inhabitants of Pojana, to whom I talked. To make proper tea one should put plants into the boiling water and then boil them for a while. Depending on the *mental herbal* holder and a context, tea is just a drink or a combined drink and medicine or just medicine. The most common reasons for drinking lime tree tea were: nice taste, preference to drink warm drinks than cold water from a well (especially in the winter) – it is said to be healthier, helps to fall asleep, ensures a good sleep, has a calming effect, lowers the fever. It was normal to see it standing on a stove. One of my interlocutors was regularly sending lime tree flowers to her family in Poland. Tea was the only mode of preparation of a lime tree (mainly *Tilia cordata;* ***lipa***). Caraway was used in the same way, often mixed with lime tree flowers. The most common reasons for drinking caraway tea were: nice taste and treating stomach-aches. Other usages of caraway, present only in some *herbals* include: fruit as spice added to meat and cabbage, stems and stalks as medicinal tea for animals. Many of my interlocutors gave me caraway seeds to smell. They were proud of the nice and strong smell of seeds they had collected. Caraway was the only herb I have ever seen sold in the local shop (it was collected by the shop owner and her children and sold on stalks), but I did not see anybody buying it. In the local cuisine just four plant species were used as spices. Among them caraway was the most important and popular, the others were horse radish (*Armoracia rusticana*, ***chriun***), thyme (*Thymus pulegioides* and *T. vulgaris*; ***cimbru, ściubryk, macierunka, cimbr, cimber***), juniper (*Juniperus communis*, ***jałowiec***) – used only by one interlocutor as a new addition to her cuisine.

Plants from the first pages of *mental herbals* were either daily used food plants or plants connected with important holidays. For example European silver fir (*Abies alba;* ***jedliczka, jodła***) used as a Christmas tree (in many houses in Pojana Mikuli Christmas trees, according to an old custom, are hanged in the ceiling) as well as firewood and it is also present in the Apocrypha. The use of fir as Christmas tree by the majority of interlocutors is explained in the utility context: a fir, compared to spruce, keeps needles indoors longer. In some *herbals* it was an important tree in the whole life of Jesus Christ, as it gave a hiding-place for the Holy Family during the escape to Egypt, and its wood was used to make the Cross.

Other plants present in at least 75 % of researched *herbals* are shown in Table 1.

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[8] Name in English (Latin name; local taxon name or names). I find it more reader-friendly to write local taxon name in a foreign language in the last place, although it is the most important and basic category for the research.

Table 1. Plants present in many but not all of the herbals (more than 75 %)

Latin name	Local name	Use
Achillea milefolium	*krwawnik (kyrwawnik)*	Healing wounds, everyday tea with a nice taste, tea drunk during menstruation, bathing children, blessed on the Day of Assumption, tea rich in vitamins
Chamomilla recutita	*rumianek*	Tea for stomach aches, teas for curing animals, bathing children, blessed on the Day of Assumption, together with *O. vulgare* used for warming ears in case of inflammation
Eupatorium cannabinum	*król zieliny (ociec zieliny, sadziec)*	Blessed on the Day of Assumption
Hypericum perforatum and *H. maculatum*	*druciona trowa, dziurawiec*	Teas for stomach problems, medicinal tea for cows, relaxing teas, blessed in bouquets on the Day of Assumption, present in Apocrypha
Mentha arvensis	*mintka*	As an additive to various teas, tea curing stomach aches
Mentha longifolia	*mintka polna (mintka dla chudoby)*	As an additive to various teas, mainly for animals
Origanum vulgare	*dobra myśl (dobra myśla, suvârf, fioletowa druciana trowa)*	Everyday tea; tea for general curing, tea for stomach problems, blessed in bouquets on the Day of Assumption, together with *Ch. recutita* used for warming ears in case of inflammation
Prunus avium	*treśnia (trześnia)*	liqueurs, for marmalade or jam
Rubus idaeus	*maliny*	liqueurs, juice, marmalade, eaten raw; fever lowering tea made of stems
Urtica dioica	*pokrzywa* (*pokriwa*)	Good for cow fodder; added into soups; nutritious tea for children; used as garnish
Vaccinium myrtillus	*afyny*	liqueurs; juice; dumplings stuffing, eaten raw; stems used for anti-diabetes teas, eaten dried

The *mental herbals* analysis revealed that there are many plants significant only to some community members. What makes a particular plant an important part of a *herbal* is not only the perception of its characteristics that make it useful and recognizable for somebody etc., but also stories, personal attachment to the plant and experience with it. A good case of the above statement is Adol's[9] story about wall-lettuce (*Mycelis muralis;* ***mliaczyk***). Adol uses wall-lettuce mainly as a veterinary medicine for curing wounds difficult to heal. He claimed that he cured by this means bad wounds of his horse many times. Once he was working for the logging company in the forest together with a Romanian man. The latter's horse was badly injured.

[9] Adol and his wife Agnieszka contributed significantly to this study.

Adol found wall-lettuce and applied it to the wound (putting leaves directly on the wound). The horse got better, but it needed more therapy with the wall-lettuce. Adol told the man to collect the plant and continue the therapy. The Romanian went out to the forest in the morning and collected a huge bundle of what he thought was the wall-lettuce. Adol saw the plant and it was not the right species. He explained once more how the plant looked like and showed it to the man. The man tried to collect the right species a few more times and finally he learned to distinguish it. Adol was very proud of himself for knowing such a good and useful plant and especially for being able to determine it, because it is not an easy task, as he said. Stories about the wall-lettuce (*Mycelis muralis;* ***mliaczyk***), its healing powers, people's ability to distinguish and apply it, as well as knowledge about places where it grows, the emotional attachment of making this plant 'his plant', etc. form an important and characteristic element of his *mental herbal*.

There is one more specific feature of that plant in Adol's *mental herbal*. Not many plants that he introduces have medicinal properties. This one is rather an exception in his *herbal*, but why? Healing in Pojana is to some extent a gender-related activity, mainly for women. However, wall-lettuce is a veterinary remedy, especially for horses, and taking care of horses is gender-related and ascribed to men.

Moreover, that plant was also present in *mental herbal* of Adol's wife – Agnieszka. She knew and was able to distinguish it, knew its name and her husband's story about it, but there was no such emotional link between her and wall-lettuce (*Mycelis muralis;* ***mliaczyk***). She had both information and ability to recognize the plant, but she rarely applied the remedy (gender reasons) and did not have emotional attachment to it. That is why in her huge *herbal* full of plants with healing properties this one was not so important. The fact that wall-lettuce was mentioned only by the members of Adol's family serves as one of many examples of highly personalized *mental herbals.* What do I mean by *herbals* personalisation? There is no one mental herbal for the whole community – different species composition, priorities given to the species, uses and other factors are important features of LEK. Important factors are also personal interests, sensual perception, age, gender, ways of life and social networks.

The perception of plants is certainly influenced by senses. The chemical features of a plant interact with human personal and social background, his/her genetic predispositions, diet etc., resulting in various perceptions and preferences (Shepard 2004). That also personalises *mental herbals*. A good example of highly pronounced taste and smell preferences is Bogusia's *herbal.* She felt a great aversion to the taste and smell of thyme (*Thymus pulegioides* and *T. vulgaris*; ***cimbru, ściubryk, macierunka, cimbr, cimber***)[10]. She valued it as a medicinal plant for high

[10] Both species *Thymus pulegioides* and *Thymus vulgaris* are in many *herbals* present as one local taxon. Some interviewees distinguish between them giving to *Thymus vulgaris* a modifier meaning – garden. This local taxon is named variously ***cimbru (ściubryk, macierunka, cimbr, cimber)***, some interviewees use a few names, many of them do not know all the names used in the community.

blood pressure, but could not stand it when it was used as a spice in soups. According to the story important in her *mental herbal,* using this spice makes the user smell like thyme. Since thyme is a very common spice in the cuisine of Romanians (Butură 1979) also those living in Bukovina (it is sold on the markets), it is associated with Romanians also by some people in Pojana Mikuli. The identity may play a role here as well (Kołodziejska-Degórska 2008a, Keeler 2009).

Not only gender, individual taste preferences, ethnic identification, but age too has a great impact on *mental herbals.* Many would expect that age influences the shape of *mental herbals* only in one direction, i.e. the knowledge loss observed in the younger generations. Some elements of knowledge are being lost. Changes take place faster than before, while information exchange is also accelerated. Nevertheless, comparing the younger generation to the older, it is important to remember that some interests come with age and everyday life experience. Members of today's oldest generation might have had a completely different LEK in their forties than they have today. It could have more similarities with the knowledge of contemporary middle generation than with the knowledge they have today. LEK is changing, there is great variation in knowledge inside the community (heteroglossia – coexistence of distinct varieties within a single 'linguistic code'), there are plants better known to the members of younger generation than to the older (compare (Müller-Schwarze 2006).

A characteristic element of elder women's *mental herbals* are hybrid tuberous begonias (***begony***; *Begonia tuberhybrida*). They are so conspicuous when walking through the village during late spring and summer until early autumn that they are present in the *herbals* of almost all villagers, but are important mainly to the female members of older generation. One of my interlocutors, 35-year-old Bogusia said about them: "I like them, but they are very demanding plants, they are like children, you have to take care of them, if you forget to water them once, they dry out and lose flowers. My mother has them, I don't. I would like to spend my whole day looking after flowers, but I have four children, two of them are still young and I can't." That is why she grew plants she called ***liścia*** (leaves). She lives with her mother and they cultivate different plants, but one day ***begony*** may change their place in her *herbal.*

Plants fashionable in Bogusia's generation are different from those popular in her mother's generation. Younger women prefer plants known as ***liścia*** – leaves – different plant species and varieties having ornamental leaves, for example varieties of ivy (*Hedera helix*), *Begonia bunchii*, *B. rex* various species and varieties of (*Coleus*). According to Bogusia they do not have to be covered during very sunny days, or watered a few times during a warm day, but they are problematic in winter. They should spend winter in a warm room. In the majority of households there is only one such room and it is difficult to fit them all there. An exchange between friends of one generation plays a crucial role in plant cultivation. The majority of plants cultivated by older women have a winter dormancy period, so they should be stored in cool places. Any change in living conditions undoubtedly influences the composition of plants on windowsills.

4. Knowledge generation and transmission – examples from *mental herbals*

The knowledge transmission patterns in a particular community influence the shape of *mental herbals* of its members. At least three types of knowledge transmission are described in the literature. Vertical knowledge transmission between generations (parent – child); horizontal transmission within one generation; oblique – intergenerational in various genealogical lines (Reyes-García 2010, Lozada et al. 2006).

However, there is another type of knowledge transmission classification, which may be applied simultaneously – knowledge exchange between two individuals, between an individual and a group, between a group and an individual (Cavalli-Sforza and Feldman 1981).

Undoubtedly even in that relatively small community (about 150 households) not everyone has contacts with everyone. The village location in the mountainous stream valley generates longer distances between households, which makes it even harder to keep a close contact with everybody in the village. The sources of knowledge people usually list are the following:

1. parents and grandparents – mentioned most frequently by children, adults say that parents used to be the source for them during childhood,
2. neighbours and people from other villages, mainly the two nearby Polish villages – Nowy Sołoniec (Rom. Soloneţu Nou), Plesza (Rom. Pleşa) – often cited by older and middle generations during the talks with children not present,
3. Father Grandpa[11] – only older generation, as only they knew him,
4. official medical doctors – older and middle generations,
5. books – older and middle generations.

No matter what was the source of one's knowledge, one of the most common sentences I heard during my talks to people was: "I have to check/ I have checked / You have to check if it is good for me/you". I have not encountered a single herbal in which the quality of plant medicine or food would be taken for granted, treated as universal. The significance of personal experience and experimentation on oneself was a crucial feature of all mental herbals I have studied. High personalisation of mental herbals is caused by the importance of hands-on experience. Continuous inclusion of new species makes this knowledge alive. Most of the women whom I talked to seemed to be in a permanent hunt to get to know new plants, especially with healing properties. That makes vertical knowledge transmission less important in this community.

Among women in their forties and older, the knowledge and experience exchange between generation members (horizontal transmission) is quite obvious in *herbals*. Statements such as: "I've learned it from a neighbour; a friend from the

[11] Father Grandpa – priest Josif Tîlmîcil, very important for the older generation in the community. Cordially called Father Grandpa. He came from Bacău and lived in Pojana from 1950 till 1972 (Krysiński 2006). He had extensive ethnopharmaceutical knowledge, used to collect plants in the village's surroundings and shared his knowledge with the community.

other Polish village told me; a Romanian woman showed me that plant" etc. are very common. It is in line with Luigi Luca Cavalli-Sforza and collaborators' thesis that the spread of horizontal knowledge implies more innovations in the knowledge than in the communities where only one method prevails – vertical knowledge transmission (Cavalli-Sforza and Feldman 1981). Orally transmitted LEK is often just environmental knowledge, but not part of a more embodied environment perception. They often know the name of a particular plant and its use, but do not have skills to collect and apply it. The missing plant's name is a characteristic feature of LEK spread by engagement with the surroundings. The *herbal* holder is able to collect and apply plant, he/she uses it often, but does not name it. Hence the presence of the actual plant is needed for communication, or sometimes a very careful description is sufficient. In few *mental herbals* common tansy (*Tanacetum vulgare*) was such a plant. One of the *herbals* holders describes it thus: "[...] a herb which is collected for cows when the milk is sour.(...) It is sickled in potato fields. (...) It has yellow 'pellets'." I do not see such a long description as a real name. That causes many communication problems. I often heard: "I have to go with him/her to see the plant, because I'm not sure which one it is". I find it very interesting as in anthropological literature naming is usually essential, for example Geertz states that naming changes 'anybodies into somebodies' (Geertz 1973), and local nomenclature has been an important subject of study (Ellen 2008). The inhabitants of Pojana Mikuli had similar difficulties with many plant names. The multiplicity of names was interconnected with knowledge transmission patterns and bilingualism of the community members. Such sources of information as books, medical doctors and Father Grandpa usually resulted in Romanian names. Polish dialect names were often various and not all of them were known to every member of the community. Even close neighbours were sometimes not able to understand one another's plant names. Showing the taxon or at least a description of physical features and uses was indispensable. It was also true for plants popular in the *mental herbals* such as thyme ***cimbru (ściubryk, macierunka, cimbr, cimber)***.

Social networks are clearly visible in people's *mental herbals*. Many members of Polish minority have limited contact with Romanian neighbours from the upper part of the village. It is well reflected in the absence of common basil (***busuioc;*** *Ocimum basilicum*) in most of the *herbals* of Polish minority members. ***Busuioc*** is a very important plant for orthodox Romanians in Bukovina. It is used as a sprinkler in orthodox church and has apotropaic functions (often seen over the rear mirror of Romanian cars together with pictures of saints, for example saint Christopher), it is taken to the church to be blessed by Romanians on the Assumption Day of Virgin Mary (15th August) in the sanctuary of Cacica (Pol. Kaczyka), it is present in almost every Romanian household in Pojana as a living plant or at least as dried specimens near the icon. Valer Butură – the author of Encyclopaedia of Romanian Ethnobotany states that this taxon is one of most important plants connected to a human being's life cycle (Butură 1979). Interlocutors from Pojana Mikului having this plant in *herbals* knew it only under one Romanian name –

busuioc [12]. On 15 August during the main mass in the Catholic church in Cacica, it is easy to distinguish the Polish minority members from Romanians by looking at their bouquets. The Poles have bouquets consisting of various cultivated and wild plants (compare with Łuczaj's data from Poland (Łuczaj 2011)), whereas Romanians bring only ***busuioc***. It sometimes happens that after the mass the women speaking Romanian with bouquets of ***busuioc*** approach women from the Polish minority asking to exchange a few plants from their bouquets for ***busuioc***. They agree on plants to be exchanged. One of the research participants told me that she had been asked to exchange plants, she gave what she could, but she did not ask for ***busuioc.*** She did not find it important to have it in her bouquet. Poles from Pojana Mikului usually do not include ***busuioc*** into their bouquets, they rather keep it separately. Another female interlocutor said: "We do not find this plant so important, they [Romanians] are really fond of this plant, I don't know why". One of the research participants knew the plant from a television program about Romanian customs. Collecting plants to be blessed in the church is a highly gender-related female task. ***Busuioc*** is a plant important in ethnic identification. It occurred in 5 out of 27 semi-structured interviews only when I asked about the Day of Assumption. In all of them ***busuioc*** was identified as a Romanian plant. Interviewees were stressing its intensive smell, and the fact that they do not know how to use it. A quite similar situation could be observed with marsh marigold (***żabskie kwiotki*** (translation: frog flowers); *Caltha palustris*) used by Romanians living in Pojana Mikului to decorate house gates at Easter. Especially in children *herbals* it occurs as a beautiful plant, which should in fact not be gathered and should not be taken home.

A few medicinal plant books were popular in the village, which did not mean that everybody had them, there were just a few books in the village but everybody knew who had them[13]. People appreciate books and treated them as a good source of knowledge. All books were illustrated with drawings not photographs. Most of them were printed in the 1970s and 1980s when some people collected plants for state organized collections. People liked to look at the pictures, but many of them could not recognize the plant species. They used them rather as an additional source of information on new uses of known plants. The Romanian name and overall depiction of the plant were indicators of plant familiarity (quite similar observations from Estonia have been presented by Renata Sõukand and Raivo Kalle (2010)). Story of ***traista ciobnului*** (*Capsella bursa-pastoris*) from the

[12] One of few Romanian names for *Ocimum basilicum* (Borza 1968). Books, medical doctors, Father Grandpa and rarely Romanian neighbours are the main sources of plants known under Romanian names in Polish minority *mental herbals. Ocimum basilicum* known under other name – ***wasylek*** was part of the *herbal* of one woman from the neighbouring village (Plesza, Rum. Pleşa). This name is most probably taken from Ukrainians living nearby (Borza cites this name as Ukrainian (Borza 1968); it is used by Ukrainians in some parts of Ukraine – authors survey in Podolia, Ukraine).

[13] The most popular was Corneliu Constantinescu's "Plantele medicinale în apărarea sănătății" editions from different years.

herbal of one of the research participants shows (well known in the literature) the difficulties people have in connecting a two-dimensional visual depiction of a plant with the actual specimen in the field. Even quite popular plant might be difficult to recognize on the basis of a picture. A woman in her eighties – Genia, treated by neighbours as a LEK authority, decided to look for ***traista ciobnului*** while collecting plants and being outside[14]. She could not find it and stated that it was not available in the village surroundings. Environmental knowledge gained from such a remote source as a book is often difficult to be finally 'enskiled'. It has a form of environmental knowledge, not an environment perception. New *mental herbal* elements found in books are visually dominating. When the new element becomes embodied, other senses gain importance. Environment perception (ethnobotanical skills and attachment) and environmental knowledge are often transmitted in different ways (Reyes-García 2010).

5. Conclusions

LEK is highly individualistic and personal (Johnson 1992, Basso 1996). Hence it is very context-sensitive. I found it important to show the knowledge context during the ethnobotanical research and analysis and – even more crucially – give back the voice to the knowledge holders. Such kind of approach has some methodological constraints, for example. It is very qualitative and is difficult for quantitative analysis (but probably not impossible). As every research using participant observation, it is time-consuming, but the meanings are negotiated during the research process with the research participants, and this brings it closer to the *emic* perspective.

Heterogeneity of this knowledge is well framed theoretically by terms of environmental knowledge and environment perception as two intermingling features of LEK (Karjalainen and Habeck 2004).

Mental herbal approach is good for understanding LEK (in its whole complexity) transmission patterns. Not imposing *etic* categories, or maybe imposing less *etic* categories, allows researchers to show their LEK in the way they understand it, to present what is important for them.

Research participants, the inhabitants of Pojana Mikuli village in Romanian Bukovina have a great everyday interest in plants around them. Their LEK is highly individualistic which is reflected in plant naming and their agency in experimenting and determining which plants are particularly good for them. Common knowledge that some plants are tasty, healthy, beautiful etc. is one thing, but personal experimenting and deciding for oneself whether it is so for him/her is much more important. Many elements of LEK are not shared in the community (compare (Sõukand and Kalle 2012)). Their knowledge is also very innovative.

[14] Specific plant searches are not popular among my interlocutors (compare with Renata Sõukand's data from Estonia (2010a))

Horizontal knowledge transmission is highly valued and significant. Emotions as well as personal attitude towards plants are important and by definition they are individual aspects of *mental herbals* of my interlocutors. Elements of ethnic identification are well pronounced in their LEK. It is quite obvious and widely agreed that such characteristics as gender, experience, life history etc. should play a role in the LEK construction and shape, although they are often underestimated in the research results.

Enclosing such aspects as emotions and personal attitude into the research increase the importance of the data in implementing the nature conservation strategies.

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