www.jates.org

Journal of Applied
Technical and Educational Sciences
Engineering, Vocational and Environmental Aspects

ISSN 2560-5429
Volume 9, Issue 1

doi: 10.24368/jates.v9i1.73
http://doi.org/10.24368/jates.v9i1.73

Preliminary examination of potential motifs of ecological origin as identity elements in an adult group, Hungary

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Abstract

The motifs (notions and concepts, in their psychosocial sense,) that make up the ecological identity and the other components of identity have been studied for two decades in several countries. We present a preliminary set of those potential motifs of ecological identity formation that come from the Carpathian landscape and landscape-related symbols. The elements of ecological identity of an adult group of Hungarian citizens, namely public administrators from all over the country, interested in learning for sustainable development have been collected by exploring the details of their potential set of motifs with local natural environmental content. Correlations of these potential motifs with ecosystem services were examined as well.

Potential or effective ecological motifs originating in the natural environment, in the local ecosystem of a group of adult learners were found to be mainly sensual notions. Old school or family excursions were also very common; as well as the fixation of imaginations and feelings belonging to memories of recreational sites. Well-known, frequently visited tourist sites are also reflected in ecological motifs. Concerning ecosystem services, the ecosystem elements that give an aesthetic sensation (namely, the cultural ecosystem services) are the most common and the strongest.

Encoding and seriating this set of ecological motifs serve to design a structured survey in the future. The examination of potential or actual ecological motifs of ecological identity, their formation and fixation can provide another point of reference in all areas of sustainability education, especially in environmental education, in global education, but also in aesthetic and moral education.

Keywords: ecological identity; ecological motifs; local natural environment, cultural ecosystem services

1. Introduction and background

An adult's self-image (identity) consists of many components, showing all the individual and community attributes that he or she consciously identifies himself/herself with. Identity, whether self-identity or the image of someone of others, almost always means not only perceptions but behaviours. An action is an elementary behavioural unit which is directed by a physical motive

also appearing as a mental motive, or by a mental motive in itself and has an independent consequence regarding its motive. This concept of action does not include physical-needs-driven behavior, and cannot be limited to purpose-driven behaviors only. It includes behaviors motivated by emotions and habits, regardless of whether these motifs are intended or not. (Farkas, 2017)

Physical or physiological motifs characterize the individual as a living being, such as hunger or thirst. Mental motifs, however, are the specific functions of the central nervous system, such as emotions, expectations, habits, goals, and so on. Within this, cognitive motifs are ideas that pertain to the consequences of actions. The motives trigger the actions. (Bandura, 1986) Motivational consciousness is a deliberate group of intentions that are the basis of sociological, such as environmental sociological or environmental educational (learning) considerations. Due to our interest in ecosystem services as a framework, it should be noted that the perceivable or conceivable elements of the environment can become personal motifs through their factual or symbolic character. Symbols are not primarily relevant in themselves, but through the transmitted meaning they carry.

1.1. Ecological identity and potential ecological motifs

The elements of ecological identity of an adult group of Hungarian citizens interested in learning for sustainable development have been collected by mapping the details of the natural, landscape origin content of their personal motifs.

Environmental identity is part of the way in which people form their self-concept: a sense of connection to salient parts of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that affects the ways in which we perceive and act toward the world; a belief that the environment is important to us and an important part of who we are. (Clayton, 2003) More specifically, the self-concept can be considered the sum of the cognitive and affective representations of the individual (and the consumer) itself (Sirgy, 1982), while identity is a social construction. (Baumeister, 1997)

Theories of personality development examine the age-related and the individual (environment-dependent, crises and experiences related) evolution of identity. Mitchell Tomasow (1995) collects the sources of natural experiences that lead to the manifestation of ecological identity. These include a range of memories from childhood locations, disturbed habitats or infamous environmental catastrophic sites, to wilderness meditation sanctuaries. The author notes that these are motifs because they have changed the personality the moment the person realized that its self-image was inherently related to his or her experiences in nature.

Ecological identity and willingness to or positive attitude toward (protecting and/or enjoy) the environment are correlated. (Schultz et al., 2004; Csonka, 2018; Molnos and Fetyko, 2018) We consider motifs as of the personality theory considers. Motifs and potential motifs – those available to the individual - together can be cornerstones of socialization with and for sustainability. The reflective knowledge of motifs is important for the people themselves, and of course, it is good for environmental educators, environmentalists, or even strategists.

In our present work, we do not dwell on the other features of ecological identity discussed in the literature: neither the environmental conscious attitudes and behavior patterns discussed in Hungary, nor the ecopolitical and deep-ecological relationships or the resource-sharing networks.

1.2. Ecosystem services

The concept of ecosystem services was made known to the Millennium Ecosystem Assessment (2003) based on the work of Robert Constanza et al. (1997). A summary of services provided by Sándor Orbán (2015, in Hungarian) argues that ecosystem services are the natural resources of sustainability. This argument looks false because several inorganic planetary materials are relevant natural resources for mankind, and because ecosystemic origin of a resource is irrespective of whether or not its use is sustainable. Although the difficult situation of the Hungarian language and professional language concerning “ecosystem” is precisely defined in András Báldi's article (2011), there is an outlasting simplified concept in a number of popular and professional articles (at least in Hungarian) in this sense: "Ecosystem services are the many benefits that humanity receives from the living world.” The sentence is incorrect because of the inclusion of "living world".

The relationship between ecosystems and mankind is understandable when we look at the resources produced by one-time ecosystems we use nowadays: the fossil resources. Humanity, however, uses resources (for example, ores) that cannot be classified among the benefits from the living world. Here we strictly use the original interpretation of ecosystem services rather than the simplification (bound to the living world). .

In this article, we have used an improved version of the ecosystem services described in 2003 (WWF, 2016), which is illustrated in Figure 1. Provisioning services are our resources directly derived from ecosystems, i.e. products: food, water, raw materials, medicinal substances. Regulating services are the benefits of the regulation of ecosystem processes. Cultural services are benefits from ecosystems that are not material. Maintenance (or supporting) services are essential to the production and production of all other ecosystem services. Later, the regulating

and the maintenance services were merged in the CICES concept (version 4.3.) widely used in Europe (Haines-Young and Potschin, 2013).

2. Methods

2.1. Sample

The potential ecological motifs provided by the Carpathian environment were collected from September 2015 to December 2016 at a total of 17 sustainability training courses organized for in-service education of public administrators by the National University of Public Service, Budapest. As students have chosen this training from hundreds of opportunities, we have assumed that they are interested in the complex theme of sustainable development. They came from all over the country, from a large number of central and local administrative positions and had the widest variety of competencies. Data on ecological identity was recorded as free text question in the second hour of the 16 hours (2 consecutive days) long course, after the ecosystem service concept was introduced. As a summary of the ecosystem services section, we made the data collection. 272 people (212 women and 60 men, reflecting the 0,73 women rate of the public sector, see Lovász, 2013) participated in the survey.

2.2. Data collecting

Participants did not encounter the concept of ecosystem identity before, they first encountered it in a game during the training. The instruction was like "Does anyone in the room can illustrate the ecological identity of Sándor Petőfi[1] with a verse of him?", actually within a Bingo activity. The task was accomplished jointly by all 17 training sessions. Students were asked to write down individually those decisive memories and moments with positive memories and feelings that have ecological service linkage within the Carpathian basin. Because of the sensitivity of the training situation, motifs were collected anonymously, without any identifiers, in a non-mandatory task, as single line free text answers. The overwhelming majority of participants wrote their short reminiscences with great pleasure. Some, less than one-tenth of the students, did not participate in the task. Respondents had 1-7 motifs per person, 4,26 on average.

2.3. Coding

The collected 1161 items, belonged to 683 semi-repetitive motifs. The occurrences were recorded in a database and then encoded by their attributes (e.g. systematics, urban or rural speciality, related ecosystem services, image or verbal information type). Most of the motifs

[1] Sándor Petőfi is the most famous Hungarian poet. His poems are the best-known lyrics of Hungary.

carried several attributes at one time. Data were insufficient to analyze the timing of motifs (such as of childhood origin or fresh memories) neither their narrative nor semantic origin (concrete experience or general knowledge of unidentifiable origin). Four motifs were identified as concepts (spring, water, watercress, green), all other were either notions (66), or a complex set of notions and concepts. There were some motifs that could not be grouped, such as rainbow, lure, water mills. In the present study, we did not take into account items from ecosystems other than the Carpathian Basin.

Encoding has been performed according to the following characteristics. Unless otherwise indicated, the 0/1 (no / yes) values could be obtained by the motifs according to their characteristics. Features were: image / verbal / mixed information; food; drink; verb; geographical name; fragrances; sight; sound and silence; touch; general landscape element (mountain, lake ...); natural habitat; economy and farming; cultural landscape; inhabited area; rural; urban; animal in general; pet or livestock; wildlife; cultivated plants; wild plants; herbaceous; woody; geological value; other; abstract; fault. Subsequently, the ecosystem service encoding was performed in the categories shown in Figure 3.

The encoding of motifs was particularly difficult in the cultural group of ecosystem services, including mental and physical health. The original Millennium Ecosystem Assessment, published in 2003, used “learning, education” verbs as a group marker, which would make it easier to link the motifs received. Mental and physical health could have been practically applicable to all elements of this series. This may also be due to the fact that data providers were focused on pleasing memories, and motifs with positive connotation during data collection. We classified (coded) those data into the mental and physical health group which had a presumably (written) health aspect, health motivation or expressed happiness.

3. Results

Except for some participants (training students) from conservation offices, and others environmentally active in their private life, students were unaware (unconscious, irreflective) of their own ecological motifs at the beginning of the sampling. Although they had no conscious and systematically understood emotional connection to the landscape before – landscape in a broad sense –, the vast majority of them took pleasure in the task. Even the professionals (ecologically qualified participants) did not know the concept of ecological identity.

Figure 1. Ecosystem services (WWF, 2016)

Among the 683 different motifs, the most common are the visuals and the geographical indications and names. 246 motifs (473 items) include a geographical name, including Lake Balaton (Balaton alone account for 5.5%, and with complex motifs and phrases for 8.3% in total data), Danube Bend, Danube, Tisza, Hortobágy and Pilis Mountains. Among the motifs that do not include a geographical marker are the Puli (the Puli dog breed), forests (generally), gray cattle (the Hungarian Grey), mountains (in general), poppies and the Tisza Mayfly (*Palingenia longicauda* together with the "flowering" Tisza River) are the most frequent.

By categorizing the motifs by senses, after the visual memories, odors and smells we found to be the most common. (Figure 2.) As already mentioned, a motif may have multiple attributes, even in the sense organ grouping. According to Csapó (1992), the sense organs do not share the same weight with cognition: vision and hearing have a distinct role. According to our present data, from the point of view of (potential or effective) ecological motifs, smells and odors are as important as sounds.

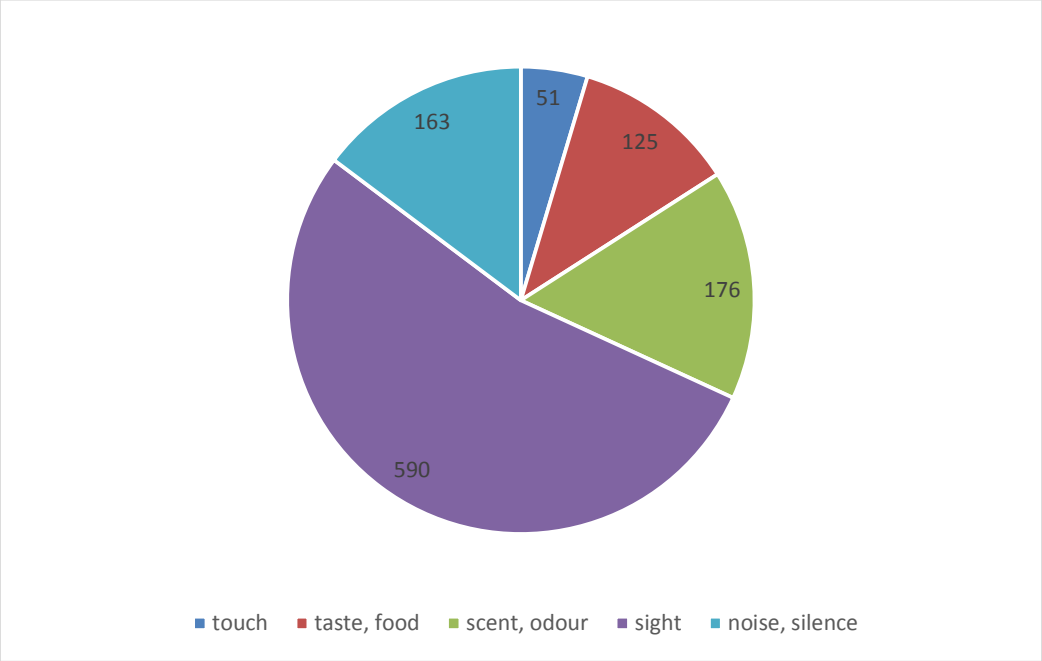

Figure 2. The mentioned motifs of the studied Hungarian adult group categorized by senses (amount of mentions)

Examining the motifs in connection with the ecosystem service groups, the importance of aesthetic elements of cultural goods as ecosystem services and of elements related to recreational services among the named motives were outstanding. (Figure 3.)

Within the big cultural, recreational services (mental and physical health included), a diverse set of situations, places, feelings, and symbols were found after coding. Some interesting examples which contain recreational attributions and motion (verbs) at the same time, were: animal-to-human relation; the livestock yard; scent/smelling of harvest; blackcurrant scent; earth smell after rain; domestic milk and dairy products; traditional low mountain vineyards and their natural and agricultural values; local food; wavy wheat field; garden and gardening; creek barking; old settlements. All these items had only a few (1-2) records.

A high proportion of motifs associated with food or green vegetation. The occurrence frequency of complex, difficult-to-understand or less attractive processes (material flows, soil formation, diseases, pest control) is low, similarly to pollination, pollen or clean air motifs. (Figure 3.)

Verbs, activities occurred in 54 motifs, with a total of 62 items . Among the actions mentioned and action-based imagination, the swimming and the excursion take the lead. Cycling and glamour are sometimes included; others were only mentioned once (for example, collecting rose hips, paddling, admiring the changing clouds; Hargita ski slopes, hiking in the snow, crunchy snow, crunchy dry leaves, walking in the woods, watering flowers, water sports). Their list is included here because they may signal many other notions and images of other several possible motifs which are actually associated with actions that were not written.

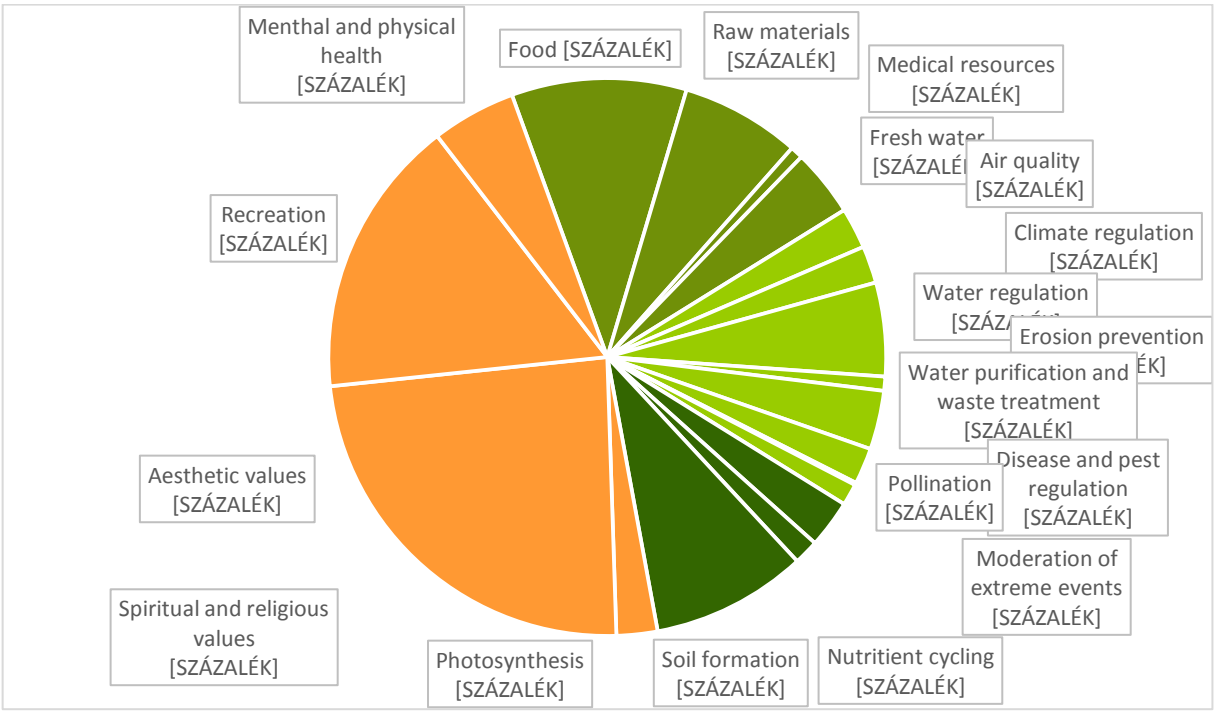

Figure 3. The connection of motifs to different ecosystem services (percentage of mentions according to total data set)

Natural habitats (a total of 170 items, such as Börzsöny forest and water, Bakony spring undergrowth, loessy grasslands, Bugac pedunculate oaks and juniper, Bükk [mountains] and its parts, volcanic cones on the Balaton Uplands) or general landscape elements without geo-indication (forests, rivers, hills, etc.) were mostly mountainous and forested landscapes. Among the images of the urban environment (77 references) the Budapest Danube shore and the Margaret Island, Hévíz, and Tihany are listed several times.

Among the cultivated plants, lavender and grapes are the most common (8-8 items). Of the 60 wild plants mentioned, the poppy and the fairy-tale (*Stipa*) are the most common ones; as well as some frequent /well-known tree species (beech, oak, robinia, pine).

Among the herbaceous plants named at least on the genus level, and among the plants as a whole, the fairy-tale and the red poppy were the most frequent. Lavender, grass, snowdrop, lily of the valley, cultivated onion and wild garlic, paprika, rape, sunflower, tulip are often included.

Between animals, Puli and the Gray cattle are often mentioned, Mangalica (curly pig) and Komondor (another dog breed) have been mentioned more than the others. Among the 116 wild animal species, Tisza Mayfly counts 10, followed by swallows, deer, and storks.

Terrestrial and mineral treasures, formations barely appeared in the data. The following were included in the database: Aggtelek dripstone, Aggtelek Cave, Gerence Valley Cliff at Bakony Mountains, Mount Gellért rock wall, sandstone, sandpit at Szamos, sand of the Körös Throat, touching stones (in general), yellow sand, salt cave, Sukoro Moving Rocks, Úrkut ancient karst,

Vadállókövek, Rám Deeps, flowering rocky slopes of mountains, water resources, red sandstone, volcanic cones on the Balaton Uplands. Only the Aggtelek Cave received several mentions.

Among the 37 drinks mentioned, the following can be related to the ecosystems of the Carpathian Basin: wine and grapes, pure water, linden tea. All other motifs are only mentioned 1-2, including those with milk or brandy (pálinka).

Among the 94 food items, the ratatouille and the mangalica account 5, followed by acacia honey, mulberry tree (Morus), fruit in general, raspberries, paprika, fish soup, and grapes with 3-4 items.

4. Discussion

We concluded that the motifs identified as ecological identity elements, potential or effective ecological motifs originating in the natural environment, in the local ecosystem of a group of adult learners are mainly sensual notions (thoughts based on more senses). Some of these are generated during school life, through cognitive processes. The well-known Hungarian motifs, schemas (stereotypes, moods), could be considered important, but this phenomenon has not been studied individually, as it does not require the collection of ecological motifs, but a text analysis of a standard Hungarian motif set.

As an ecological identity element, old school or family excursions were also very common; as well as the fixation of imaginations and feelings belonging to memories of recreational sites. Well-known, frequently visited tourist sites are also reflected in ecological motifs.

From the classification of ecosystem services, it is also apparent that the ecosystem elements that give an aesthetic sensation are the most common and the strongest.

As described in the introduction, nature-related motifs, and thus their knowledge, are considered to be important as a basis for environmental awareness and sustainability socialization.

The basics and effectiveness of ecological identity can be investigated in several ways. Among the motifs of a networking, active, creative and responsible person, one can suspect a close or far-off environmental damage, a fear of health damage (actual or newsworthy), but also a direct gain or an emotional, cultural, aesthetic affiliation. Conscious, formulated (usually: verbalized, sometimes illustrated), and therefore familiar ecological motifs reinforce environmental awareness and communities. They help people become acquainted with people living in a common space. The process sums up the so-called fourth pillar of 21st-century learning (UNESCO, 1996): the pillar to learn to live together. This pillar was reinforced by the Decade of Education for Sustainable Development as follows: learn to live together, here and now.

5. Summary and Outlook

Establishing emotional attachment to nature in many communities does not go automatically either today. The examination of potential or actual ecological motifs of ecological identity, their formation and fixation can provide another point of reference in all areas of sustainability education, especially in environmental education, in global education, but also in aesthetic and moral education.

The quality of human life basically depends on natural resources, on the "green capital" and the services it provides. Understanding and maintaining these resources are essential to us all. The understanding of complex systems and processes requires complex thinking – something that only a few of us allocate enough cognitive capacity to take the trouble. But emotional attachment has an extraordinary motivating power. The things by which we identify ourselves determines our attention, our learning, our actions. It is therefore important to investigate whether family-based and community-based socialization, education, adult learning, tourism, or the media create a positive bond to which ecological elements and how.

Another important area, although it is better known, the group of news and facts that triggers early or elemental indignation and ability to act, because of their negative, value-damaging nature -- see the environment and media researches, e.g. Székely (2003).

Common motifs, and in particular their threats, can transform their followers into a community, as is often the case. Actions, community moves, or new and renewed value libraries are born - depending on what competencies the community can build.

Enjoying and nurturing the ecological motifs of our self-identity, i.e., in their original occurrence form, gives pleasure and satisfaction. Their impairment, their threats trigger self-defense reactions, or grief, alienation. Knowing ecological motifs in the Carpathian Basin is important for people living together, and for landscape designers, nature conservationists, architects, leisure organizers, and educators. This work does not in any way represent the motif set of adults living in the Carpathian Basin, but it created an inquiry structure for mapping of ecological motifs, and highlighted the likely significance of cultural ecosystem services in identity creation.

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Short professional biography

Réka Könczey is a biologist with behavioural and population ecological studies, as well as an environmental activist since the Danube movement of the eighties. She is recently co-ordinating collaborative research projects in the field of environmental education, sustainability science and working as an educational researcher in the Hungarian Institute for Educational Research and Development at Eszterházy Károly University. Beside being involved in the development and implementation of several governmental strategies for environmental protection and environmental/sustainability education in Hungary she is also the author of a popular book on everyday environmental practices, namely the Green Daily Practices (Zöldköznapi Kalauz) and she is a board member of the Hungarian Society for Environmental Education. https://ofi.academia.edu/R%C3%A9kaK%C3%B6nczey

Katalin Czippán is an educator, having experience in the field of communication and education for sustainable development. She works for the National University of Public Service (NUPS) and as an international consultant on education and communication for sustainable development issues. She served Hungarian and other governments, organizations to develop and implement education strategies, programs, campaigns to connect people with nature for valuing and protecting the planet. She serves as deputy chair of the Commission on Education and Communication of the IUCN. Experienced presenter and author of several books and articles on education and communication for sustainability for example Collaboration and Education for Sustainable Development (2010), editor and co-author of Health Promoting Universities (2015), Social responsibility of public officers (2019).