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# Psychological Factors for the Formation of Collective Ecological Consciousness

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## Abstract

This article presents the results of a theoretical analysis of the concept of collective ecological consciousness from the standpoint of its characteristics. It also displays fundamental differences between ecological and individual consciousness. Furthermore, the paper depicts the correlation between environmental culture, which arises in the process of socialization, and the power of environmental intents aimed at protecting the environment. During the integration into society, an individual learns a universal system of beliefs, values, customs, traditions, norms, and rules that are followed by dominant public. They also evolve relationships with the world and nature surrounding them. In particular, in a society with a high level of development of collective ecological consciousness, young people from an early age employ effective strategies for the conservation and restoration of natural resources. Thus, the authors draw attention to the crisis of morality and spirituality, which is the main reason for developing a selfish type of collective ecological consciousness. The authors give examples of environmental education concepts and training to lay the theoretical foundation for developing effective programs to improve environmental culture in the younger generation.

## Keywords

Collective ecological consciousness; Ecological psychology; Socialization; Environmental culture; Environmental education; Valuable Orientations; Spirituality

## Introduction

The relationship between humans and nature has always attracted the attention of researchers in various fields of science. However, recently, the relationship between humans and nature also affects human economic activity, and the environmental problem is becoming more acute and threatening as it spreads from local-regional-national –global scales (Miroshkin *et al*., 2019). The individuals, who carry out actions based on a deeper understanding of the laws of nature, taking into account the many areas of interaction in natural ecosystems and awareness of our belonging to the environment, have stake in the process of the salvation of the planet (Andy, 2009; Mueller, 2009). Thus, we can conclude that the ecological and moral tenets of human interaction with nature have moved from many environmental issues. One such issues is a shift from demand and other negative impacts of human activities on wildlife to find ways to prevent negative consequences of the anthropogenic impacts on building conscious and purposeful relationships with it (Ingalsbee, 2016; Kronlid and Öhman, 2012).

The integration of the said strategy of relations with nature into everyday life is an example of development of ecological culture and moral and ecological consciousness at individual and collective levels, which depends on a person's beliefs, worldviews, and values. Thus, environmental education and increased level of collective ecological consciousness and culture are becoming increasingly important, as we approach large-scale environmental problems. However, unfortunately, the transition to a market economy, which is closely interrelated with the forced course of capitalization processes, increases the wealth, while rejecting fundamental moral principles and norms. At the same time, they often develop behaviors aimed at transformation, activity, and extermination, which prevail over the ability to enjoy natural beauty. Therefore, we can conclude that the crisis of morality deepens the current environmental crisis. The type of the relationship with nature is closely interrelated with the learned moral principles and the level of development of the moral consciousness of each individual and society. That is why the question of ecology is the need for this research connecting to moral education and socialization processes, taking into account all the psychological aspects of these intricate processes.

Humanity cannot survive without an ecological consciousness, that is, from its essence. Therefore, we must permeate this consciousness in all directions including the industry, technology, production. The science should have its transformation for catering the life of present and future generations. Ecological consciousness is the basis for understanding the need for environmental protection and awareness about the lack of a holistic position in interacting the environment. At the same time, ecological consciousness provides an understanding and awareness about personal responsibility of a particular person to preserve certain species of animals and plants and all life on Earth. Given that it is formed based on collective ecological consciousness, it is crucial to understand the principles and ways of greening the societies worldview.

## Methodology

This article presents a theoretical analysis of scientific papers and publications that highlight current issues of environmental psychology. In particular, the authors explored the essence of collective ecological consciousness, which is considered common to a particular social structure of views on environmental issues, strategies for building relationships with nature, and its conservation. The latter relies on knowledge of natural ecosystems and unique ideas about unity, the population of the planet, and the environment as a whole. The authors first explored the relationships between collective ecological consciousness, environmental culture, environmental intentions, and individual behavior. Therefore, the predominance of a pragmatic approach and its effects on the use of natural resources are described.

Additionally, spiritual and moral aspects of the formation of the behavior are represented. Finally, identified are the key ways to raise ecological consciousness and culture through systematic environmental education and training among young people's using socialization process as a tool. In conducting this study, the focus was on the principle of systematicity in describing the psychological phenomenon studied along with the factors of its formation. The scientific paradigm of the doctrine of the noosphere and accumulated psychological knowledge of consciousness were also taken into account while analysing the contexts.

## Results and Discussion

### *The concept of ecological consciousness*

Before understanding the essence of the concept of collective ecological consciousness and the methods of its formation, it is pertinent to reveal the meaning of the concept of consciousness as a category of psychological science. Thus, consciousness is the unity of all mental processes, states, and properties of human as a person. It is one of the most challenging ways to reflect objective reality spiritually. Consciousness is an integrative formation that combines all the forms of knowledge and human experience known to science and the attitude to what it reflects. It follows that consciousness is a specific form of human life and the product of its interaction with objective reality.

It is worth noting that philosophers, psychologists, and sociologists have studied the phenomenon of consciousness for many centuries. In particular, Descart (1984) defined consciousness as a completely independent entity, in other words, a mental substance, the nature of which finds its expression in the process of thinking. On the other hand, Leibniz (1989) argued that human consciousness is a holistic system, the elements of which are constantly interacting with each other and closely interconnected. In this case, apperception (the process of perception) is its core.

Wundt (1927) defines consciousness as “inner experience”. It is only the “immediately real” phenomena constituting this experience, and nothing behind or beyond it. That is the object of psychology, as opposed to the physiological or psychophysical investigation (Kim, 2016).

Analyzing the meaning of the concept of consciousness, Taylor (1982) noted, “we know from our own experience what consciousness is: it is the understanding of ourselves and the world around us that is the basis of our existence. Beyond this, however, we know almost nothing about the nature of consciousness, and there is a reason for this: consciousness cannot be seen, felt, touched” (Taylor, 1982, p. 167).

At the same time, in modern psychology, we can distinguish three main approaches to study the phenomenon of consciousness. Primarily, these approaches include the ‘biological naturalism approach’ (Revonsuo, 2001), the ‘global workspace theory’ (Baars, 1988), and the ‘introspective physicalism approach’ (Jack and Shallice, 2001). Moreover, recent theoretical models, for example, introspective physicalism, proposed by Jack and Shallice (2001), have stressed the strong relationship between executive function and conscious awareness. In other words, it is aware of its representation and performs intentional self-monitoring and evaluation, otherwise known as introspection. Conscious contents provide the nervous system with coherent global information (Baars, 1983).

Abstract concepts as consciousness, including our currently expressible beliefs, intentions, meanings, knowledge, and expectations, need attention (Baars, 1988). In reality, every task people engage in involves all three elements: conscious experience, access, and control. Ultimately, the role of consciousness cannot be understood if we do not explore all three. However, one can make the case that conscious qualitative experience is fundamental to understanding other aspects and uses of consciousness (Baars, 1988).

Consciousness enables comprehension of novel information, and conscious information enables many types of learning using various brain mechanisms (Baars, 2002). Within a single cognitive cycle, consciousness functions to filter the attention paid to the agent's internal model of its world and to select contents to be learned (Baars and Franklin, 2007). In addition, conscious goals and perception of results enable voluntary control (Baars, 2002).

The psychological dictionary interprets consciousness as a high level of mental reflection, which is unique to human and is empirically manifested in a set of sensory and mental images. As 'attitude to the world with knowledge', consciousness is defined in other psychological dictionaries. According to Skripnik (2012), 'consciousness' is the highest form of the most general property of matter - reflection. This concept consists of generalized, evaluative, and purposeful reflection of reality in its constructive and creative transformation, advanced numerical modeling of actions, the anticipation of their consequences, and rational regulation and self-control of human activity (Skripnik, 2012).

One of the modern scientists, Furman (2017), emphasizes that adequate methodological tools and instruments for comprehensive knowledge of such an incredibly complex phenomenon as consciousness have not yet been created. The researcher insists that consciousness is a multifunctional being that generates meanings and values. According to the scientist, consciousness is the actualization of cognitive, sensory, intentional, intuitive, and other psycho forms (personal experiences, thoughts, knowledge). Therefore, they all enable reflection in acts of self-awareness and self-conceptualization (Furman, 2017). The latter is a practical approach forming ecological consciousness in future generations. Thus, two main aspects of consciousness can be identified. In particular, they include the processes that take place in consciousness. These include attention, memory, emotions, and more. At the same time, the other side of consciousness is represented by its content. The latter is the basis for 'conscious life' and the formation of attitudes toward the world. Universality and objectivity are the main properties of consciousness (Plyaskovskiy, 1991). Suppose the universality of consciousness is the awareness of the reflected and the detection of personal activity. In that case, the objectivity of consciousness reflects only particular objects, aspects, and properties used in practical human activities (Plyaskovskiy, 1991).

Accordingly, analysis of approaches interpreting the concept of consciousness showed that most authors note four main psychological components in its structure. These elements include knowledge, differences between subject and object, goal setting as a component of activity, and attitude to self, world, and other people. Based on the above definitions of consciousness, in modern scientific and methodological space, many psychologists, philosophers and sociologists consider this phenomenon a higher form of reflection of reality, which is inherent in society and is associated with worldview and human thinking, self-control and anticipation of the results of their behavior and activities.

At the same time, various forms of consciousness have been formed in the scientific space, such as scientific, ecological, professional, philosophical, religious, pedagogical, moral, aesthetic, legal, political, etc. There is also a modern form of ecological consciousness (Plyaskovskiy, 1991; Skripnik, 2012). Each form of social consciousness has its specific ways and objects of reflection and a special kind of knowledge.

In particular, ecological consciousness is a form of social consciousness at the formation stage. Ecological consciousness covers the whole set of ideas, theories, views, and motivations that reflect the ecological side of social life. It also includes the actual practice of relations between man and his environment, society, and nature, including a set of regulatory principles and norms of behavior aimed at achieving the optimal state of the system 'society-nature' (Skripnik, 2012).

Ecological consciousness is understood as a higher level of mental reflection of the natural and artificial environment, one's inner world, reflection on the place and role of human in the biological world, and the

regulation of this reflection (Skrebets, 1998). Skrebets (1998) states: "Consciousness, like thinking, can be determined by the content and direction of the dominant attitude of human (or people) to reality. In this understanding of the essence of ecological orientation concerning the ecological content of the mental reflection of reality, we can talk about ecological consciousness". Dobryden (2004) proposes the following definition of ecological consciousness: "Ecological consciousness is a type of social consciousness, which is a worldview system of views, ideas, theories and emotions that determine the practical and creative activities of human in the formation of socio-ecological relations, and vice versa". Levochkina (2003) emphasizes that ecological consciousness is a higher level of mental reflection of different types of the surrounding world, especially the natural, artificial, and social environment and one's inner world. The researcher also attaches great importance to reflection, through which awareness of the place and role of human in the ecological world. Skladanovska (2006) emphasizes: "The term ecological consciousness should mean not just the attitude to nature and a set of ideas about the relationships within the system 'man-nature', but the higher level of development of human consciousness and self-consciousness, its worldview aspect largely corresponds to the concept of 'environmental' and is characterized by awareness of life as an excellent value for any creature, a willingness to grind before life piously. According to the scientist, such a worldview fills the deep essence of every human action and reveals its moral aspect, which is familiar with the vector of evolution. She notes that the focus of eco-consciousness is the creative power of human thought.

Fenchak's (2005) works present an integrative approach to the definition of ecological consciousness. The scientist sees the notion as a manifestation of the highest form of reflection of the actual ecological situation, responsible for a holistic view of environmental problems, awareness of human unity and environment, a sense of responsibility, a healthy lifestyle, and active environmental activities. Mainly, a person's attitude to the world around him determines the aspects mentioned above (Fenchak, 2005).

Based on the analysis of scientific works by Nabochuk (2013), we can conclude that the ecological consciousness of the individual means a high level of individual reflection of the surrounding reality. This environment ensures harmonious coexistence and interaction of man and nature.

Shedlovska (2013) understands ecological consciousness as a complex of specific knowledge (particularly the one which lies within the plane of human ↔ society ↔ nature), emotions, and evaluations. All of these reflect the specific way of treating the nature, creating the appropriate emotional background, testifying a certain level of environmental concern and instructions on the actions taking place in a particular field of values determining each of the components above and manifests itself in these components. The essential cognitive component is knowledge because it includes the totality of ideas and concepts of individuals about the environment, the interrelation of humans and nature, and the results of these relations. The effective component is formed by personal subjective evaluation of the individual and by emotion that arises as a result of the system of relations ''human – environment'. Active component shows readiness for action, which has a tremendous significance for society. Strictly ecological behaviour is that index, the most noticeable results, carrying the benefit or harm, especially when there is an interaction between human and surroundings. Therefore, ecological sets produce this component as the readiness for a particular behaviour, readiness to support or not specific actions in a 'human-environment' system. Besides, those sets can reflect the support or lack of social-ecological offers. Thus, we may consider cognitive, affective, and active components the structural elements of ecological consciousness, each highly influenced by the values field within which an individual exists. It means that ecological consciousness contains specific knowledge relevant to the correlation in the system 'human – environment', the assessment of its values, and specific settings to actions within this system (Shedlovska, 2013). According to the researcher, the proposed definition does not go beyond the classical triad in the interpretation of consciousness through the cognitive component (mental reflection of the natural, social, artificial, and internal environment), emotional (attitude

to the environment), and connotative components (behavioral – self-reflection and self-regulation of the environment, strategies, and technologies of interaction with it).

Puk (2018) defines ecological consciousness as "an empathic and abiding, connecting-presence with natural processes. Ecological consciousness aims to find a sustainable niche for human beings in the Earth's natural order and preserve ecological integrity" (Puk, 2018, p. 118). Ecological consciousness fills our whole being and guides us in our daily decision-making (Puk, 2018). Morris (2002) says that an ecological consciousness thrusts humankind back into the world and down into the earth, and the focus shifts from human-centered to earth-centered (Morris, 2002, p. 580). According to Thomashow (1996), its is a high level of ecological understanding and awareness, and the sense of self as part of a larger system (Thomashow, 1996, p.19).

In general, Lysianska and Bielousova (2020) distinguish between regulatory, cognitive, structural, and integrative approaches to define the essence and content of the concept of 'ecological consciousness'. Thus, ecological consciousness is the same consciousness, one of its forms. However, a particular specificity and direction characterize it. The differences are due to the uniqueness of the natural world and the constructive, creative components involved in its transformation.

Ecological consciousness is an integrative construct encompassing knowledge, values and behavior patterns manifesting in environmental stewardship and consumption. An individual's higher-order ecological consciousness is consistent with ecological wisdom; they guide an individual in their ways of living and domestic activities. Adequate ecological consciousness underlies pro-environmental behavior (Khrushch and Karpiuk, 2021). Considering the theories of consciousness described above, we conclude that increasing the level of environmental education leads to an automatic transition to a new model of environmentally sound behavior through changes in the type and forms of attitudes toward the environment.

### *The concept of collective ecological consciousness*

Skrebets (1998) believes that grouping ecological consciousness is an integral part of the dialectical sum of individual perceptions of the environmental characteristic of a particular social group. At the same time, group ecological consciousness can act as a carrier of mass phenomena about the environment. In particular, the scientist explains the meaning of the concept of 'mass phenomena' of ecological consciousness. Thus, he interprets them as "homogeneous assessments, overlapping guidelines, accepted stereotypes, and internally inspired images of environmental disasters associated with people's mental experiences at the same time" (Skrebets, 1998, p. 44).

According to Skrebets (1998), public ecological consciousness is a set of priority feelings and opinions of various social groups on current and possible future environmental problems. In particular, the structure of public ecological consciousness includes generalized judgments, ideas, and stereotypes that reflect the attitude of large social groups or society as a whole to the phenomena and problems of ecology. Skrebets (1998) emphasizes the essential fact that "ecological mood in ecological, social consciousness is not only the most massive socio-psychological phenomenon but also one of the most influential forces that unite and motivates people to certain activities: production, domestic, cultural, educational, creative or destructive" (Skrebets, 1998, p. 44).

De Chardin (1965) stated: "We cannot wait passively upon the statistical play of events to decide which road the world will take tomorrow. We must positively and ardently take a hand in the game. If it is true, as I suggest, that salvation lies in the direction of an Earth organically in-folded upon itself, it is then surely evident that through a reciprocal mechanism of action and reaction, the vision and provision of this ultimate end, this outcome of History and Life, may be made to play an essential part in the building of the future, if only by creating the atmosphere, the psychic field of attraction, without which it will be impossible for

humanity to continue to converge upon itself" (de Chardin, 1965, p. 256). The scientist pointed out that humanity must be considered a collective subject and a holistic organism endowed with a single mind. He interpreted history as the self-development of a single spiritual source. He further described this process as an evolution caused by the inner spiritual energy that gives rise to matter and its various forms and involves certain stages: survival, life, thought, and survival. The researcher calls the organized community of animate and inanimate biosphere. The origin of thought within the biosphere consolidates all forms of being in the noosphere. Then, the noosphere develops to perfect unity (integrity). The transition to it (perfection) is the 'point of Omega'. After that, the tendencies to isolation and disintegration will be overcome, and humanity will become the only intelligent organism in absolute harmony with the world (de Chardin, 1959: 407–417). In his analysis of the evolution of human and society, Krutov (2014) sees the bright future of humankind in the pursuit of just and peaceful coexistence on our long-suffering Earth and the boundless energy of love, goodness, joy, and happiness.

Moreover, a remarkable influence on the state of reality has a collective (not individual) consciousness. The strength and effectiveness depend on the critical number of participants who interact with each other. These participants are not only people but also other living beings (plants and animals), united in a community that creates a single information and energy field - the consciousness of the living, able to connect with the consciousness of the planet - the Earth's noosphere (Krutov, 2014, pp. 367 - 368).

Therefore, based on the analysis of approaches to collective ecological consciousness, we conclude that it is considered an integrative entity. The mentioned entity includes a set of views on building relationships with nature due to its level of knowledge, patterns, and ideas about the unity of the individual, humanity, and the environment. At the same time, the collective ecological consciousness determines the general interpretation of the forms and content of different types of interaction between human and nature, which is inherent in a particular social structure. Consequently, this type of ecological consciousness is characterized by the system of effective human activity for the environment. Furthermore, it analyzes the goals of interaction with the environment, strategies for organizing and implementing the impact on individual objects of nature, and ecosystem goals. Also, the collective ecological consciousness is the basis for the general acceptance and observance of all norms and rules governing the relationship between human and nature.

### *The structure of collective ecological consciousness*

Levochkina (2004) identifies cognitive, emotional, and cognitive components in the structure of ecological consciousness. In particular, the cognitive component covers all ideas and beliefs about the natural, social, artificial, and internal environment. He is also responsible for the mental reflection of the surrounding reality. In this case, the emotional component forms a confident attitude to this environment through emotions and feelings that arise from contact with him. Finally, the cognitive component is responsible for self-reflection and self-regulation in the environment. Therefore, we can conclude that the behavioral component is responsible for the specific features of interaction with nature.

Dobryden (2004) refers to the structure of ecological consciousness of various types of environmental activities in each sphere of human existence. Skladanovska (2006) believes that ecological consciousness integrates seven components. In particular, it identifies the cognitive component, which covers the entire system of knowledge and ideas about the environment, evolution, development, role, and place of human in the universe, and its relationship with the ecosystem and the universe as a whole. The forecasting component provides the ability to predict the possible consequences of applying a strategy of environmental behavior in the long run. The creative component performs the function of imaginary and figurative modeling of probable developments in the ecological system and on Earth. In particular, it provides an opportunity to create a shared vision of the results and consequences of purposeful actions of each individual

and human society. The integrative component is the foundation for understanding the need for the harmonious coexistence of human with nature. Therefore, it is due to this structural component of the collective ecological consciousness, a system of norms, principles, and rules of interaction with the world, economic activity, and use of natural resources based on knowledge of the laws of the biosphere and noosphere. The reflective component contributes to the ability to form assessments of individual and collective actions and the commonality of thoughts and feelings about the results of human activity in natural ecosystems. The moral component is the basis for forming collective and individual responsibility for everything that happens on Earth with human's participation, with his tacit consent, support, or lack of opposition (Skladanovska, 2006). The communicative component provides the ability to transfer accumulated human knowledge about nature in the process of interpersonal communication, learning, and education. The problem of self-education and upbringing in the youth is at the intersection of the reflective ability of ecological consciousness. Additionally, the presence of corresponding character traits and personality traits would catalyze the development of ecological consciousness and its formation at the collective level (Skladanovska, 2006).

### *Types of collective ecological consciousness*

Shedlovska (2011) identifies five types of ecological consciousness: *conscious-activity, conscious-selfish, conscious-detached*, *limited-activity* and *limited-selfish*. In particular, individuals and social structures with deep environmental knowledge and well-developed skills and abilities used in everyday life and professional activities have a conscious-activity type of ecological consciousness. In this case, the relationship between human and nature is subject-subject. Thus, this type of ecological consciousness can be found in the teams of scientific and educational institutions and environmental organizations. At the same time, Shedlovska (2011) notes that this type of consciousness includes two subtypes: *active* (activity becomes the meaning of professional and daily life) and *passive* (activity not as a life credo, but depending on circumstances, specific events, such as the storms or floods, etc.).

Individuals and social structures with a piece of sufficient environmental knowledge, skills, and abilities but who do not use them in real life or professional activities are characterized by a consciously *selfish ecological consciousness*. In this case, the relationship with nature is subject-object. There are individuals and commercial entities that have a sufficient level of ecological awareness, yet they do not implement their knowledge in their real life or professional activities. This type of environmental consciousness is called consciously egoistical; consequently, such relations with the environment are subject-objective by nature. That is, the environment is treated solely as an object of consumer activities of an individual. At the same time, individuals with such a type of environmental consciousness clearly understand the consequences of their actions. They adhere to the behavioral strategy of an active consumer and use the natural resources solely for their own benefit. Nevertheless, the bearers of this type of ecological consciousness are aware of the consequences of their actions. However, they continue to follow a behavioral strategy of active consumption and use of natural objects only in cases of self-interest.

Among the representatives of the consciously detached type, a passive position on environmental issues is widespread. At the same time, they have a good set of environmental skills and knowledge. However, individuals and social structures with a consciously detached ecological consciousness consciously avoid active actions aimed at protecting the environment due to a lack of desire or motivation, despite the available opportunities. Therefore, the relationship with nature is object-object.

Limited activity type of ecological consciousness is characteristic of residents and social groups in rural areas. It is characterized by the lack of a sufficient level of environmental knowledge. At the same time, rural residents, based on their own experience and intuitive approach, tend to conduct their activities taking

into account the interests of nature. However, this ecological consciousness can be divided into active and passive representatives. At the same time, the relationship with nature is subject-subject.

The bright example of a limited-selfish type of ecological consciousness is when the interests of its bearers dictate their actions. However, unfortunately, the bearers do not know the harmfulness of their actions and skills that would help them not to do so. Relationships with nature have a typical subject-object nature, where nature is the object of achieving human goals and meeting the needs of society, i.e., the natural environment is exclusively the object of activity of each individual and society as a whole.

Summarizing the above, given the realities of modern Ukrainian society, we can identify three main types of collective ecological consciousness: altruistic or conscious-activity and limited-activity types of ecological consciousness (nature of the subject-subject relationship), neutral or consciously detached type object-object relations) and pragmatic or consciously selfish ecological consciousness (the nature of subject-object relations). Thus, we have tried to describe the main types of collective ecological consciousness ordinarily existing in Ukrainian society. At the same time, the key criterion in determining them was the presence of a set of knowledge, skills, and abilities that, in one way or another, relate to human interaction with nature.

Thus, a society with a high level of development of collective ecological consciousness evaluates information coming from the outside and inside world, considering the available knowledge and awareness of itself among all the diversity of environmental objects. Moreover, the society mentioned above preserves the existing system of attitudes towards other people and the environment. Such action serves as a basis for managing the behavior of each of its members. The development of the individual ecological consciousness of each person occurs amid the process of socialization, i.e., the entry of the individual into society and building a relationship with other people and their environment, which ensure the formation of this type of consciousness. The described process requires compliance with social norms and rules, meeting the needs in acceptable and legal ways, fulfilling commitments, and discipline, which should be manifested in behavior, expressions, and following traditions and customs dictated by collective ecological consciousness.

Palamarchuk (2003) notes that a system of ideas about the world (according to which the highest value is the harmonious development of human and nature) aims to interact with nature to meet the needs of human and nature. Consequently, the ecological imperative should determine the nature of the interaction: it is correct and permissible that it does not destroy the ecological balance; ethical norms and rules should apply equally to the interaction between people and the natural world. Thus, it characterizes the high level of development of collective ecological consciousness, which ensures the harmonious interaction of society with nature aimed at preserving and restoring its wealth.

### *Psychological features of the formation of collective ecological consciousness*

The formation of collective ecological consciousness is influenced by the level of ecological culture, which is characteristic of a specific society. Simultaneously, ecological culture should be considered a systemic concept, the most critical and integral component of universal culture, reflecting the development level of individual and collective ecological consciousness. In particular, it covers the system of intellectual, moral, ethical, patriotic, legal, and aesthetic values of human and society as a whole, which contribute to the conservation of natural resources, environmental security, and sustainable social, economic, and cultural development of all humanity and each individual.

In ‘Environmental Values in American Culture’, three sets of values that influence the rise of environmentalism in American society are identified. They include:

1. religious and spiritual values based on religious teaching and spiritual beliefs;

2. anthropocentric values or human-centered views focused on human benefits (aestheticism, included) and goals;
3. bio-centric values emphasizing rights and ethics of nature (Kempton, Boster and Hartley, 1996)

Benton and Benton (2004) argue that forming a system of environmental values is closely linked to mastering human activity's socio-cultural and economic context. Thus, the problems of ethics of relations with nature reveal their content not in special thematic sections or subjects but in discussing the moral aspects of various types of human life. At the same time, the critical role belongs to the ability to reflexively perceive the consequences of their behavior and any interaction with nature.

It should also be noted that a society with a high level of development of ecological culture subordinates all types of its activities to the requirements of rational use of natural resources, cares about improving the environment, and takes measures to prevent its destruction and pollution. At the same time, the dissemination of actual scientific facts, the formation of appropriate value orientations, and mastering practical skills and abilities to apply constructive strategies of interaction with the environment is a solid basis for the formation of a model of caring for nature.

Another critical factor in developing ecological consciousness and forming environmental culture is environmental responsibility. The psychological nature of environmental views and beliefs that influence the formation of personal and collective responsibility includes three main components. The intellectual aspect encompasses a set of environmental knowledge and intellectual skills that are associated with the process of forming a worldview. Also, this component includes methods of finding causal relationships between certain phenomena and processes. The personal aspect includes motivation, a system of attitudes and assessments, confidence in their ability to make a significant contribution to implementing a system of measures to prevent environmental catastrophe, and internal needs that necessitate environmental protection. Thus, the inner readiness to protect nature is determined by the individual's desires, intentions, and needs in implementing its position through actions and activities to protect the environment. In particular, the worldview, beliefs, ideals, and public interests, which simultaneously act as motives for activity in learning, education, and socialization, are filled with environmental content.

Thus, the level of development of collective ecological consciousness is closely interrelated with the level of development of the spiritual sphere of each individual and the system of concepts, ‘values - attitudes – activities’, which are realized in the process of education. Additionally, during the environmental training, the emphasis is on intelligence and operation of the system of concepts ‘consciousness - thinking - knowledge – activity’.

In particular, ecological consciousness is a set of theoretical knowledge about environmental problems and ways to solve them combined with some experience of changing the adverse effects of human activities on nature. The ecology of the world begins with the ecology of the soul. External events and human’s inner world are closely intertwined and follow each other. In the conditions of increasing the intensity of production, accelerating the processes of movement, and increasing the anthropogenic impact on the environment, it is vital to launch global processes that will affect the ecology of the human soul.

Sand (2009) wrote that nature is beautiful; every time it breathes feelings, love, youth, and beauty live in its imperishability. However, today, the state of nature raises the question: “How to change people's minds and direct their activities in a constructive direction to solve the global environmental problem?” It is necessary to form a new worldview, a new system of values and philosophy, a new way of life, and a program of concrete actions to prevent a new environmental crisis. The philosophical basis, in this case, may be ecological philosophy, i.e., the philosophy of the harmonious relationship of human with ecological systems. Therefore, in the system ‘society - man - technology - natural environment’, it is necessary to find a way to

harmonize the relationship between nature and human. The ecological approach must penetrate science in order for science's ecological and humanistic orientation to resolve the traditional contradiction between 'anthropocentrism' and 'cosmo-naturalism'. Moreover, the critical role here can be played by social ecology, which contributes to forming a new type of environmental thinking.

Vernadsky (2001) emphasized that in the gradual destruction of the Earth's biosphere, it is necessary to change human activities to resolve the contradictions between society and nature. The latter should be based on new principles because they provide for reaching a reasonable compromise between society's social and economic needs and the ability of the biosphere to meet them without compromising its normal functioning. Thus, environmental success and modern human's social and economic efficiency depend on a critical review of all areas of human activity and areas of knowledge and spiritual culture that shape the individual's worldview.

Wicks (2011) pointed out that most people pursuing pragmatic goals treat the world as an object of consumption from the subject's position, i.e., the leading actor in communication between human and the world. Nevertheless, in moments of admiration for the beauty of nature and enjoying the sight of waterfalls, rainbows, or delicate flowers, a person can forget and enter into a new type of relationship with the world, namely the object-object relationship. Further, a person seems to dissolve in the object he/she is contemplating. Any object of nature can use it. Such 'dissolution' is a beautiful moment of awakening the state of genius within the individual, characterized by loss of connection with time and space, merging with the environment, and correlation with particular fragments of life.

It is worth noting that thinkers have pointed to the close relationship between the spiritual and natural spheres of human existence. According to philosophers, from antiquity to the postmodern period, the universe is harmonious and strives for balance in everything. Therefore, it is essential to define the priority boundaries for human activity in which society will unite spiritual values and worldviews. In particular, one such idea may be the concept of the noosphere, described by Vernadsky (2001). The scientist considers ecology as a global problem of the present and describes the forecasted ways of its decision. According to him, the noosphere is the geographical envelope of the globe. The leading role is played by the transformation processes of matter, energy, and information associated with the activities of '*Homo sapiens*'. Throughout the history of humankind, lots of opportunities have arisen for using the natural environment and its resources to meet the needs of society. However, the current environmental situation indicates the need to change the nature of the relationship with nature.

Specifically, Marcuse (1991) emphasizes the need to give up everything superfluous to preserve ecological balance. The author argues a repressive attitude toward the individual in a large society because the 'consumer society' forms a unique culture and a particular opinion. On the one hand, an individual has rich creative potential. On the other hand, society seeks to put the 'soul' in the framework of empty 'forms'. According to the scientist, the latter is a conflict between the individual's energy and the pressure of social conventions and institutions, growing every day. Marcuse (1991) proposed a way to overcome or mitigate this conflict, which, on the one hand, is to develop creative imagination as a way to improve society, and, on the other, to form a global worldview that will reduce consumption to maintain ecological balance. The scientist notes that mass production, consumption, and mass culture have prevailed over traditional forms of consciousness, which form a conscious attitude of human to nature. Marcuse (1979) considers this topic in his essay and writes that nature is becoming a lever of control over human in the modern world. Commercialized, polluted, and militarized nature is an extension of the hand of society, as well as its power. In particular, in the ecological and existential sense. Hence, the essay's author emphasizes the need for the liberation of nature, i.e., the revival of the vital forces of nature and sensual aesthetic qualities that are far from a life lost in endless competition. Instead, it is used for domination and becomes a matter devoid of value (Marcuse, 1979, p. 109). Marcuse (1979) also wrote that air and water pollution, noise, and industrial

and commercial attacks on the open space meant the physical enslavement of *Homo sapiens*, and the connection between human liberation and the liberation of nature is becoming apparent today (Marcuse, 1979, p. 110).

Global, regional, and local environmental problems are one of the main threats to civilization and the causes of social turbulence in modern society. In particular, due to scientific and technological progress, people are increasingly interfering in natural processes. As a result, we are witnessing new cases of disruption of the dynamic balance and systemic nature of the organization of ecosystems. Environmental changes are almost close to the thermonuclear threat, which may soon lead to the extinction of *Homo sapiens* from our planet. Therefore, considering the circumstances described above, special ecological knowledge and competencies, the level of development of ecological culture not only of each individual but also of the society as a whole begins to play an increasing role. In our opinion, teachers and educators can significantly influence the environmental situation and eradicate the need for young people to benefit immediately. The environmental situation should alter at the cost of unwise and barbaric exploitation of natural resources and form knowledge, competencies, and unconscious beliefs. All necessary efforts can serve as a solid basis for choosing a caring attitude towards nature, understanding their role in the ecosystem, and responsibility for saving life on the planet.

Thus, there is an urgent need to identify a component of ecological consciousness that will provide the most effective transition from learning environmental knowledge to the practical use of environmentally sound behavioral strategies in everyday life. In particular, it is worth mentioning that such components of ecological consciousness as ecological knowledge, attitude to the world of nature (ecological attitude), ecological beliefs, and ecological intention play a unique role in forming ecological behavior. Likewise, the value of environmental education and upbringing in the context of solving the problem of environmental protection is that they have a direct and indirect impact on the formation of ecological consciousness, as well as its structural components: environmental knowledge, environmental beliefs, and environmental attitudes. Moreover, sometimes they develop into behavioral habits that are closely interrelated with environmental protection issues, species diversity, and ensuring the sustainable development of natural ecosystems.

Environmental intent is critical in forming collective and individual environmental behavior. In addition, it is a conscious desire to complete the environmental action by the selected program of interaction with the environment, which aims to achieve the projected result. Thus, ecological intention is an integrated personal formation, the structure of which is the unity of four components: cognitive, affective-evaluative, value and target, and behavioral. Precisely, the cognitive component is represented by environmental knowledge. It is the result of the process of cognition by the individual of the expected environmental activities through the acquisition of social experience while learning in the family and educational space. At the same time, it ensures their reflection in the ecological consciousness of human through ideas, concepts, judgments, hypotheses, theories, principles, laws, and patterns passed down from generation to generation. The affective-assessment component includes ecological self-assessment, a positive attitude to natural subjects, and a system of reflective connections with everyday ecological activity based on the ability to imaginatively reflect their feelings about natural objects and actions in the natural environment. Finally, the value and target components provide an opportunity to determine the priority of environmental intentions of the individual and their nature and are closely related to personal readiness and propensity for future activities in the area of residence or activity. Noticeably, it directs the activities of the individual in a particular direction. The latter contributes to achieving goals in interaction with nature and is the basis of the particular activity within ecosystems.

The behavioral component is responsible for the processes of actualization of environmental goals and self-regulation of environmental activities. It supports the conscious desire to complete the environmental action following the developed program to achieve the expected environmental result.

During the formation of ecological intention in the structure of ecological consciousness of the individual, in psychological and pedagogical practices, it is necessary to consider the internal determinants of the development of ecological consciousness. The cognitive function is the primary motive for studying the environment, as well as environmental knowledge, values, and attitudes to the environment. The cognitive function is likewise vital for competence, communicative function, rehabilitation, evaluation, self-awareness, psychophysiological and psychotherapeutic, environmental self-control, self-realization, environmental planning, programming, forecasting, and implementation of environmental intent. Also, it should be noted that the formation and development of ecological intentions of the individual in the current environmental situation have not yet become the subject of a sufficiently complete study in psychological science. Therefore, the introduction of psychological and pedagogical support in educational practice, which contributes to environmental intentions, will help individuals develop the most flexible and adaptive strategies for environmental activities, considering current environmental conditions and life.

In considering psychological features of the formation of collective ecological consciousness, it is expedient to mention the mechanisms that regulate the behavior of representatives of a specific social group. Subsequently, they are described in the Theory of Planned Behavior and the Theory of Value-Belief Norm.

### *Theory of Planned Behavior (TPB)*

"The theory of reasoned action (TRA) along with its subsequent developed version of the theory of planned behavior (TPB), as articulated by Ajzen (1991), is based on the perceived behavioral control component to account for behavior without a person's volitional control and norms" (Ajzen and Fishbein, 1980; Ajzen and Madden, 1986). "The proponents of this theory argued that subjective norms refer to the strength of normative beliefs and the motivation to comply with these beliefs and social and moral values. As observed earlier, the theory of planned behavior extends the theory of reasoned action (TRA) by its addition of influences on behavior beyond people's control. TPB theorists believe that two assumptions have to be made to assess these influences by employing the perception of one's control:

1) the predicted behavior must be at least partially beyond volitional control;
2) the perception of control must reflect actual control upon behavior with some accuracy (Kalafatis, Pollard and Tsogas, 1999).

Theory of Value-Belief Norm (VBN): The premise of value-belief-norm theory (VBN) is that pro-social attitudes and personal moral norms are significant predictors of pro-environmental behavior (Stern *et al.*, 1999). The theory above suggests that people who undertake environmental action have at least some altruistic or moral reason for doing so or have been affected by self-serving interests (Aliagha *et al.*, 2013).

Vargo (2006) argues that at the present stage of the formation of Ukrainian statehood, it is advisable to use a kind of Ukrainian mentality to form an ecological society, as it focuses on connection with nature. Similarly, the ecological society remains the future society, which may be the result of the merger of Western European science and rationalism and the inherent traditional worldview of an attentive attitude to nature (Vargo, 2006). He also considers increasing the level of development of ecological consciousness as a critical condition for transforming Ukrainian society into an environmental one. Thus, Vargo (2006) emphasizes that one of the directions of development of society should be the formation of worldviews and social relations designed to overcome the modern alienation between human and nature. Besides, the author points to the need for changes in society's political, economic, and social life to its greening. Changing worldview plays a vital role in this process. Finally, this scientist characterizes the new imperative of

collective ecological consciousness: to take care of the search for ecological balance and its preservation. Thus, the collective ecological consciousness can be considered an indicator of a high level of society's development, which considers the interests of nature at the level of their own. According to Vargo (2006), the ecological society, which has the highest level of development of ecological consciousness, considers human and nature in the light of new values, namely the equal development of humanity and nature.

Thus, the leading role in forming individual and collective ecological consciousness and public environmental culture belongs to education and upbringing. After all, the individual manages the multinational corporation and produces harmful products to nature and human, antibiotics, growth promoters, takes measures to cover up the oil spill in the sea bays, and damages the landscape by dumping a used ticket. Therefore, with significant theoretical and practical potential, training and education can significantly impact human's inner world and personal characteristics and prevent even the slightest harm to the environment.

### *Methods of formation of collective ecological consciousness*

It should be borne in mind that the collective ecological consciousness is characterized by the gradual formation and the phasing of this process. The most crucial conceptual idea on which the environmental education program should be based is the principle of integrity as a characteristic of the individual, which is achieved through personal development and socialization. Therefore, the individual is an active, active subject who can transform the world and himself and take personal responsibility for the results of their actions. The factor of recognizing the value of ecological orientation in the system 'human – nature' is decisive in the process of self-determination and self-development of the individual and identification of oneself as a citizen of the state. Among the main concepts that should be used in the preparation of the program to increase the level of ecological consciousness and culture, we can highlight the system-activity approach to the organization of the educational process, the strategic approach to personality formation, and the personality-oriented approach. Sukhomlinsky (2004) also said that education should be subordinated to the main thing: "… education of humanity, i.e., humane attitude to nature, society, other people and yourself".

In addition to environmental laws and a social tool that maintains a sufficient level of environmental culture and fosters environmental values, citizens' assemblies, foundations, and committees on ecology and environmental protection play an important role. Thus, environmental unions and organizations should become a leading force in environmental education for the population, especially the younger generation. Of course, all citizens must abide by the provisions of the Constitution and laws and take care of the environment. However, one study of the relevant laws is not enough to form ecological consciousness and ecological culture in young people. It is necessary to hold events dedicated to ecological culture in educational institutions to intensify propaganda and agitation to raise its level. At the same time, it should be borne in mind that the formation of ecological culture in school and university students is influenced by family, educational institutions, society, and the environment. To the previous list, we can also add a variety of life situations and other factors that directly or indirectly affect the development and formation of young people. Nevertheless, environmental education is considered an essential component of public education and the process of socialization in general.

Tolstoukhov (2007) writes in his environmental encyclopedia that 'environmental education is a process of forming a humane, responsible, caring attitude of human to nature as a unique value, affirmation in the views, beliefs, moral attitudes of the principles of rational nature management, readiness for the environmental activities'.

It is important to note that the environment, work, and human relations have always been considered a means of environmental education. Travel, excursions, walks, a study of works of art dedicated to nature, and work on research sites are traditional activities in this direction. During excursions, hikes, and work on the research site, teachers draw young people's attention to the richness of nature and various environmental problems and explain the need for care for the environment.

Studying educational subjects such as science, botany, biology, geography, and the basics of ecology is an effective means of environmental education in the learning process. In addition, the young generation develops knowledge about the unity of the individual, society, and nature, the place and essence of the ecosystem in human life and society, a sense of responsibility for the planet's future, and awareness of the need to care for the environment and nature.

Toegtherwith, the formation of ecological culture of students of higher education is carried out by studying the humanities and natural sciences. The contribution of the first disciplines is closely interrelated with the assimilation of the ideas of the unity of humanity and the biosphere, the relationship between the historical development of human civilization and changes in the natural environment, and moral and aesthetic attitudes to nature. It is expedient to generalize students' ideas about today's global problems around the idea of optimizing the interaction between nature and society. A unique integration role belongs to environmental courses, which form a holistic view of environmental issues based on the content of other disciplines. The priority of environmental education is the organization of interdisciplinary seminars, discussions, and business games that will help students systematize their knowledge and integrate it into their lives. Kemp (2015), Oakeshott (1972), and Walker (2017) argue that the following methods need to be used: 1) non-simulation (problem lectures and seminars, thematic discussions and round tables, brainstorming, etc.), and 2) simulation (analysis specific situations or case studies, role-playing, business games, etc.).

Caravan (2013) singles out conversation and preparation of abstracts and reports as the most common environmental education methods. That is right, and the scientist notes the essential role of environmental education methods in developing skills to search and organize information. However, according to the researcher, to increase ecological consciousness in students, it is more appropriate to use forms and methods of work to develop motivational-value and behavioral components of ecological consciousness and behavior, including research and problem-solving. Equally, students must find answers to them during the lesson, analyzing and summarizing the information obtained. Also, Caravan (2013) talks about such interactive methods as brainstorming, case studies, critical discussion, group discussion, role-play, simulations, seminars, and group projects as a source of information. With the latter carriers of environmental norms and requirements, the students themselves act, and environmental norms and requirements are perceived as their own choices and decisions, which is a much stronger incentive to comply than external coercion. Among the methods of extracurricular activities are conferences, seminars, quizzes, group work, and elective classes. The reason is that such forms of work provide an opportunity to go beyond the curriculum, supplement the knowledge, skills, and experience of students and provide choice and decision making, analysis, and assessment, contributing to the formation of environmentally sound behavior (Caravan, 2013).

Thus, the acquisition of environmental knowledge, raising the level of environmental culture, compliance with laws and regulations on environmental protection and nature management, and instilling a love of nature must move from environmental education and socialization of the individual to the needs and qualities of each individual. Simultaneously, educational institutions play an essential role in forming the described qualities, knowledge, and skills in young people. This fact must be considered in forming an ecological society because the younger generation and future professionals will serve Motherland's prosperity, fight for cleanliness, and organize cities and villages, improving the people's economic and cultural life. The young generation may soon become the nucleus of a new collective economical

consciousness that promotes environmental protection and the wise use of natural resources. Therefore, it is appropriate to emphasize the importance of environmental education, training, and preparation of future thought leaders and lay the groundwork for adopting new innovative views on ways and means to eliminate the adverse effects of human activities from the authorities of modern environmental thought.

## Conclusions

Thus, environmental competence becomes one of the essential characteristics of the society of the future, as damage to nature is caused not only intentionally but also due to ignorance. According to the Ecological Encyclopedic Dictionary, ecological consciousness provides a deep understanding of the inseparable connection of each person with nature, the dependence on the welfare of society, and the integrity of the natural environment from anthropogenic changes beyond the use of adaptive abilities as a species.

It should be noted that solving the problem of greening consciousness and forming ecological culture is one of the critical psychological and pedagogical tasks: developing ecological thinking, shaping an ecological worldview, and creating a sense of ecological responsibility for each individual in socialization.

Therefore, we consider ecological education and raising the level of development of ecological culture as a constant process of deepening knowledge about the environment, forming an attitude to nature as a value, and the ability to work to protect the environment actively. In particular, environmental education covers the training and development of personality, which are aimed at forming a holistic worldview, values, responsible attitude to nature, and strong beliefs in the need to protect it.

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## Authors' Declarations and Essential Ethical Compliances

*Authors' Contributions (in accordance with ICMJE criteria for authorship)*

| Contribution | Author 1 | Author 2 | Author 3 |
|---|---|---|---|
| Conceived and designed the research or analysis | Yes | Yes | Yes |
| Collected the data | Yes | Yes | Yes |
| Contributed to data analysis & interpretation | Yes | Yes | Yes |
| Wrote the article/paper | Yes | Yes | Yes |
| Critical revision of the article/paper | Yes | Yes | Yes |
| Editing of the article/paper | Yes | No | Yes |
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*Research involving human bodies (Helsinki Declaration)*
Has this research used human subjects for experimentation? No

*Research involving animals (ARRIVE Checklist)*
Has this research involved animal subjects for experimentation? No

*Research involving Plants*
During the research, the authors followed the principles of the Convention on Biological Diversity and the Convention on the Trade in Endangered Species of Wild Fauna and Flora. Yes

*Research on Indigenous Peoples and/or Traditional Knowledge*
Has this research involved Indigenous Peoples as participants or respondents? No

*(Optional) PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)*
Have authors complied with PRISMA standards? Yes

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Authors have no competing financial, professional, or personal interests from other parties or in publishing this manuscript.

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