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**MORAL DIMENSIONS OF PROPERTY
IN ECOLOGICAL CONTEXT**

(towards a justification of a “proprietary” ecology)

AUTHOR’S ABSTRACT

Of a dissertation for acquiring the scientific degree of
“doctor of science”

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The dissertation consists of an introduction, six chapters, a conclusion and a list of literature used to the total volume of 318 pages. 12 tables and 3 figures are used to illustrate the theses being defended. The list of quoted sources contains a total of 468 titles of which 168 in the Cyrillic alphabet and 300 in the Roman alphabet, and 58 from sources on the internet. There are 9 publications on the topic of the dissertation of which 5 studies and **1 monograph on the topic of the dissertation that has already been published.**

The text is brought into conformity with Bulgarian legislation and international treaties in force as at 1st October 2020.

The defense of the dissertation will be held on at hours in Hall of at a session of a jury selected by the Scientific Council of IFS.

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I. GENERAL CHARACTERISTIC OF THE DISSERTATION

1. Principal Thesis

Living organisms and abiotic factors related to them that form together single ecosystems must be owned while respecting their moral significance. The moral significance of the “non-human *life*” and of “non-living nature” can be associated both with satisfying some specific human interests (individuals, communities, generations) and with respecting the inherent *value* of nature (living organisms, biological species, ecosystems, the Earth and the Outer Space). The value of life (biocentrism) must be kept not only and solely by means of universal protection of human embodiment (anthropocentrism) but also by ensuring the sustainable development of ecosystems (ecocentrism). And although it is beyond any doubt that human remains the main axis that every regulation of the possible forms of possession turns around it should be acknowledged that property is a sufficiently flexible tool by which a number of ecologically significant biocentric and ecocentric components can be included into the “human-nature” relation.

Compared to the traditional scope of property as a pool of the three classical powers: possession, use and disposal, *ownership* of nature is subject to restrictions with clearly outlined moral dimensions. It is precisely the ethical considerations that restrict ownership of living organisms and natural resources as in some cases the imposed restrictions considerably reduce the scope of ownership by *transforming it* into a possibility for contemplation (“aesthetic” property – for example: the ownership of a landmark landscape-thing), into a means of protection (“defensive” property – for example: the ownership of a nature reserve being kept in its natural state) and even into an obligation to take certain care (“husbandry-like” property – for example: the ownership of the mineral resources of huge economic and ecological value). The impact of morality on ownership leads to changes in latter’s essence: it starts to behave not merely as limited power (subjective right) but also as a responsibility, as an obligation.

This is particularly true when ownership is placed in an *ecological context*. The dynamics of life (the question concerning the

natural cycles and climate) and peculiarities of living organisms (the question concerning their genetic uniqueness, biological sensitivity and presumed intelligence) require the establishment and application of a system of different property models which should be used as formats for interaction between people (humans/mankind) and their surrounding world (the Earth/Outer Space). In this text “property” will mean any claim to *ownership* made both with respect to the most commonly discussed forms of biological life (plants and animals) and also to the very boundary of life (viruses and microscopic life, including extraterrestrial life). Property over abiotic factors that make possible the existence of life is considerably more “traditional” but also tied to a number of new challenges. Owning them has its own moral dimensions both when it comes to the Earth’s natural resources and when the celestial bodies and asteroids in the Outer Space are the object of claims.

Regulation of the relations between man and nature by modeling the link between life and property in ecological context is possible thanks to *ethics*. It is precisely in the field of ecological ethics that *the values* upheld by man via the tools of property should be revealed. This will direct juridical regulations towards new models of possession of nature that take into account its moral significance. On the boundary between the bioethics and the ethics of natural resources one can sketch the outlines of an ethics committed to ecology in which the questions about the value of life are placed into the broader context of the ecosystems of the earth and even of extraterrestrial outer spaces. One of the things that bring together the natural components that fall within that broader ecological context is the circumstances that it is in the field of human possession. Nature, whether living or not, is possessed by humans and the legal entities established by them, thus rendering the issue of property and its moral dimensions a key one for every ecology. The existence of a system of moral views in the field of the so-called “proprietary ecology” – an ecology operating with the concept of property - could be the basis for establishing and applying specialized models of property integrated into a long-term policy of the state. Such an approach has the power to protect the nature in advance, thus preventing the necessity of implementing “emergency governance” in

the difficult times of environmental crises that most likely lie in store for mankind. I believe this study – with its specific focus on the moral dimensions of property in ecology – has its share of contribution precisely to the attainment of that task which, although it remains theoretical in essence, can have numerous and important practical and applied consequences.

2. Topicality and Significance of the Set of Problems

The capacity of the living organism to pursue the attainment of certain outcome, to move freely in space, to interact with the other components of nature, to suffer pain and to be, in their own manner and due to their own specific embodiment, **vulnerable** to the increasing might of mankind, are just part of the reasons why ownership of living organisms has a number of ethical dimensions. Unfortunately, those *dimensions* are, to a significant extent, ignored or at least quite formalized in the debates upon the adoption of the existing environmental regulations in Bulgaria. Despite the rapid development of ecological ethics and environmental law over the past decades the question about ownership of “non-human life” and its relation to the ownership of “non-living nature” has not been posed in a systematic and purposeful way. This is the reason why one of the main tasks of this dissertation is to fill at least partially that gap in Bulgarian ecological ethics by justifying the idea of the so-called “proprietary” ecology and an ecology where the protection of nature is carried out by way of property-related regulations.

The additional topicality of the dissertation comes from the circumstance that part of the matters examined in it deal with the relation towards wild nature and, in particular, with the pathogens and viruses that threaten human life: questions that have become and still are exceptionally topical after the COVID-19 pandemic that spread the entire world and caused global changes not only in human-to-human relationships but also in the relations between man and nature. The regimes of property proposed in this dissertation could be integrated into the so-called “Green Deal” of the European Union which sets the ambitious target for Europe to become climate neutral by 2050.

The legislation quoted in the dissertation is up-to-date as at 1st October 2020.

3. Object, Purpose and Tasks of Research

The interdisciplinary nature of the problems related to the possession of “non-human life” and “non-living nature” is reflected in both the subject matter and the purposes and tasks of this scientific research.

The object of study are the ethical dimensions of human ownership (property) with respect to things being living biological organisms or ones created as a result of geological processes which are beyond human control as well as the possible manners of taking such ethical dimensions into consideration by the legal regulations in the Bulgarian environmental legislation in force.

The main purpose of this study is to clarify the role property could have in the legislative conduct of certain morally significant environmental policies. The main purpose so defined is closely linked to *two additional purposes*, and namely: a) to contribute to the further holding of the scientific discussion on the problems being examined in order to reach some specific proposals for amendment of the Bulgarian legislation in force; and b) to fill in a gap in the philosophical and ethical literature due to the fact that currently the problem of the moral dimensions of the regulations of property in ecological aspect is not thoroughly studied as there is no monograph or a dissertation in Bulgaria dedicated especially and solely to this set of problems. The main beneficiary of the study is perceived to be the Bulgarian environmental debate whose quality could be improved by the successful integration of additional ethical arguments in holding the discussions of public significance regarding the adoption of some legislative solutions or others in regulation of property.

The main tasks of this scientific study are:

a) to examine and analyze the meaning of the “landmark” nature and of the possibility of achieving environmentalist objectives by cultivating a sense of the beautiful (landscape ethics as an “ethics of home”);

b) to reveal the moral grounds and boundaries of the protection of biological diversity in the world of microorganisms and, in particular, with respect to pathogens and viruses (conservation ethics as an “ethics of the wild”);

c) to formulate some possible property-law solutions to the

matters concerning the protection of plants and conservation of forests by turning them into spaces to be visited at one's own risk (the model of undefiled nature and the „ethics of free forest“);

d) to study the mechanisms of protection of the genetic identity of biological species of natural flora and fauna and of the relation of such mechanisms with the concept of property (ethics of the boundaries between the biological species and heredity);

e) to analyze the existing ethical obligations between generations living in different times, and to study the possible solutions for preserving life on Earth in the long run, including by the means of property (ethics of future generations);

f) to pose the question “Can the thesis about the moral significance of life outside the anthropocentric focus of the biological ethics as we know it today (biocentric, ecocentric, physiocentric and holistic ethics, including ethics of extraterrestrial life) survive?”.

The attainment of each of the main tasks stated here is the key purpose of a separate chapter of the dissertation. All of them are united by the quest for the “*good*” (and event “*virtuous*”) property – the property that could meet to the greatest extent the moral requirements laid down by the contemporary ecological ethics. It is precisely in this context that the study examines not only a number of “ecological” restrictions of property – as we know it from the “classical” postulates of the “Western” property law but also the attempts to justify new models of possession, among them the ideas about establishing an intergenerational trust (trust property) or culturally-determined property (one that is common to all mankind or property of indigenous population) as well as the concepts of defensive and integrative property offering some possible lines of transition from an ethics of natural resources (an ethics useful for man) towards an ethics of the Earth (the nature that is worthy per se). The main emphasis and the most important contributions of the dissertation are related to the moral justification of some possible new models of ownership applicable in an ecological context.

4. Methods of Study

The main *approaches* used in this scientific study are the analytical method and the interdisciplinary method. The *analytical*

approach makes it possible to make an analysis of the ethical questions which are posed within the framework of individual regulations by studying and problematizing different parts of statutory acts in force that fall within the objective scope of environmental law. The *interdisciplinary* approach is necessary in view of effecting a relation of exchange and mutual cooperation of ethics, ecology and law when solving the ecological problems of increasing gravity. Ethics turns out the main unifying factor in this interdisciplinary interaction since it is precisely through the moral dimensions of ecological problems that the possible legal solutions are being sought.

By taking into consideration the specified main approaches some *theoretical methods* as well as other methods – *normative, systemic and logical*, have been used in the dissertation. They aim to clarify the specifics of ecological regulations and their philosophical and ethical grounds and boundaries. The use of the said methods allows for a complex and consistent clarification of the respective ethical and legal problems and provides an opportunity for formulating scientific findings and conclusions, including formulation of proposals regarding some possible future regulations in the field of environmental legislation. Some *inductive* methods are also used which enable both to identify some unknown or currently less known processes and to present new explanations of why and how certain regulatory policies take place as well as of the scope of their effects.

The interdisciplinary approach necessitates that the *philosophical* methods of abstraction, doubt, criticism, problem thinking, and generalization, be used which are leading in the entire study. What is aimed by them is to examine the problems of ecology, morality and law in their uninterrupted interrelation without losing the big picture as well as the attainment of the main purposes of the study.

5. Scientific Novelty

The scientific novelty of the dissertation is determined by the circumstance that currently in our philosophical literature there is no monograph or dissertation dedicated to the moral grounds and the boundaries of human ownership (property) with respect to the living biological organisms and with respect to the natural resources seen

in their ecosystemic unity. For this reason this dissertation fills a gap in Bulgarian philosophical and ethical literature.

6. Distinctions and positioning of the study

Protection of nature is a fundamental question being studied by an increasing number of scientists, activists and politicians using different tools and approaches. Ecology is a field where the volume of solutions offered has been extraordinarily increasing for the past decades. It is precisely in the field of ecology (technology being another such field of science) that some of *the most exotic “innovations”* in the established ethical and legal concepts and categories. It suffices to mention the concept recognizing right in favor of nature. Although the “rights of nature” are often met with skepticism and mistrust their examination in any case poses a number of challenges that should be met and discussed in the area of the moral philosophy.

The question concerning the legal personhood of nature as a whole or of some individual ecosystem components in it¹ as well as the question regarding the rights of animals², including their right to own property have been examined by me in detail in other scientific studies and will not be the major *emphasis* of this dissertation. The object of this study are the ethical dimensions of the manner in which humans possess the living organisms (non-human life) and the abiotic natural components related to it (non-living nature). One of the possible *models of ownership* is the concept of defensive

¹ See **Stavru, St.** Prava na prirodata – nasred ekologichnata eshatologiya i pravnata teoriya? [Rights of Nature – Amidst Ecological Eschatology and Legal Theory?] // Sotsiologicheski problemi [Sociological Problems], 2016, No. 1-2, pp. 146-166; Stavru, St. Solidarnostta i granitsite na pravata – vazmozhni li sa prava na prirodata [Solidarity and the Boundaries of Rights] IN: Marinova, E., M. Mizov (eds.) Moral i etika na solidarnostta v savremennoto obshtestvo [Morality and Ethics of Solidarity in Contemporary Society]. Sofia, 2016, pp. 341-354, as well as Stavru, St. Pravo na sobstvenost i pravo na prirodopolzvane – razgranichenie i saotnoshenie [Right to Property and Right to Use the Nature – Distinction and Correlation] // Savremenno pravo [Contemporary Law], 2007, No. 2, pp. 43-59.

² See **Stavru, St.** Sandra, zhivotnite i badeshteto na pravata [Sandra, Animals and the Future of Rights] // Eticheski izsledvaniya [Ethical Studies], 2017, No. 2, pp. 8-53, as well as Stavru, St. Hora i zhivotni. Napalno izgubili sebe si [Humans and Animals. Completely Lost Themselves] // Kultura [Culture] Weekly, 24 April 2015, No. 16 (2808), p. 2.

(“warding-off”) property which is the stand-alone subject matter of another monograph study of mine³. In order to avoid an unnecessary repetition the concept of defensive property is presented in summarized form in the relevant places in this dissertation by making references to the quoted monograph.

This dissertation builds upon the dissertation⁴ I defended for the scientific and educational degree of “doctor” in contemporary philosophy. While the scientific study there was focused on “human life” as an ethical and legally significant embodiment producing a number of regulatory fluctuations in legal personhood in this dissertation the scope of analysis is extended into the considerably larger context of “non-human life” and “non-living nature” in view of taking their moral significance into consideration when creating the possible models for possessing them. In this sense this study continues and comprises part of conducting a single scientific study of the moral significance of life by making a *transition* of a kind from questions related, as a rule, to the narrow understanding of the scope of *bioethics* (what is allowed and what is prohibited with respect to the use and possession of human body) to questions concerning the relation between *ethics and bioecology* (what is allowed and what is prohibited while using and owning of the remaining living organisms and the abiotic natural components related to them).

7. Practical Significance

The practical significance of this study is manifested in several *lines*. *Firstly*, all ethical considerations regarding the value of non-human life and non-living nature are examined and studied in the context of their significance when introducing some legal regulations or others. The efficiency of the ethical analysis aims at formulating some possible legislative solutions whereupon the results of the study can serve for discussing and proposing some specific

³ See *Stavru, St.* Veshti v prirodno sastoyanie: sobstvenost I otgovornost za vredy v konteksta na chl. 50 ZZD [Things in Natural State: Property and Responsibility for Damages in the Context of article 50 of the Obligations and Contracts Act]. Sofia: Ciela, 2020, pp. 239-240 et seq.

⁴ See *Stavru, St.* Choveshkoto tyalo mezhdru vaplatenostta I konventsiyata. Savremenni perspektivi [Human Body Between Incarnation and Convention. Contemporary Perspectives]. Sofia: Ciela, 2016, p. 352.

amendments to the Bulgarian legislation in force. To that end, the existing statutory framework regarding the problem being examined and its ethically significant essence are summarized within each chapter of the Main Exposition, usually in the chapter's end. *Secondly*, the scientific study makes some proposals for theoretical reconsideration and conducting of the existing models of regulation of nature in order to introduce some efficient nature protection regulations that take into consideration the most up-to-date moral and philosophical discussions regarding the importance of property for the development of contemporary ecology.

8. Scientific Contribution

Scientific contributions fall into the category of "enrichment of existing knowledge" and can be presented in summary in the following manner:

a) justification of the concept of "proprietary ecology" in which the solutions to the environmental problems are sought not by adducing arguments for rights in favor of newly-recognized subjects (plant rights; animal rights; ecosystem rights and rights of nature as a whole) but by outlining the moral boundaries of the ownership of the living organisms and non-living nature (justification some specific "ecological" restrictions of ownership related to the peculiarities of natural processes and the moral significance of the interaction in time between the present-day and future generations; argumentation, delimitation and competition among different types and models of ownership);

b) formulating and juxtaposing the concepts of defensive ("warding-off," super-exclusive and "empty" at the same time) and of integrative ("inclusive," "open" and "pluralistic") property which are examined as possible models of ownership of nature brought into conformity with the ethical dimensions of contemporary ecological problems facing mankind;

c) identification and assessment of the ecological potential of the so-called "culturally-determined property" recognized in favor of the "indigenous" population as well as its link to the common heritage of mankind principle applied upon the regulation of the natural resources of the Earth and in outer space;

d) justification of the thesis according to which the protection of nature can be attained via the property regulations not only by imposing restrictions (limits of ownership) but also by attributing obligations (management duties) to the owner;

e) justification of the thesis according to which the beautiful (the “landmark”) in nature has a moral and legal meaning in regulation of the landscape, including in view of the necessity of supplementing and developing the relevant Bulgarian legislation;

f) justification and delimitation of three levels of ownership to the living organisms: corporeal, intellectual and sovereign property (recognized by the Bulgarian legislator in the context of protection of biological diversity and genetic resources as national treasure) as well as examination of the competitive relations existing between them;

g) proposing different solutions when addressing the claims of human possession and control on the boundary between the living and the non-living: in terms of viruses, viroids and prions as such claims are examined in the context of the topical events in Bulgaria and all over the world in relation to the pandemic caused by SARS-CoV-2;

h) distinguishing between the existing ethical and legal regulations of the useful (breeds, varieties, landmark species, genetic resources) life, on the one hand, and, on the other, of the harmful (pests, pathogens) life, including by juxtaposing the metaphors of (extraordinary) war and (sustainable) struggle;

i) summarizing and systematizing the specific tools for managing the ratio (conflict) of the protection of genetic identity (biological diversity) and the purposeful introduction of genetic modifications (genetically-modified organisms) into a certain biological species as well as of the ethical limitations related thereto when creating biological hybrids and transgenetic chimeras;

j) application of an alternative to the concept that fixes nature into resources and things by presentation of regulations centered around the natural processes and cycles existing in nature (the idea of “free” nature and natural movement of natural components);

k) formulation of the main priorities of the intergenerational ethics when using the natural resources and the management of

the policies with respect to climate changes, including a justification of the necessity of introducing working institutional mechanisms for discussing and respecting the interests of future generations (synchronization of political and geological time through the intermediation of the ecological time; establishment of political representatives or ombudsman of future generations; reconsidering the concept of harm; recognizing of a new kind of crimes against future generations, etc.);

l) presentation of the ethical dimensions of extraterrestrial life in the context of the existing regulations of outer Space and celestial bodies as well as the provisions related to property contained therein by also examining the chance of creation of a new kind of ownership based on the principle of common possession instead of exclusivity.

9. Volume and structure of the dissertation

The dissertation consists of 318 pages and includes: a) a framework; b) an introduction; c) six chapters; d) a conclusion, and e) bibliography. Bibliography contains a total of 468 information resources of which 168 in Cyrillic alphabet, 300 in Latin alphabet and 58 from the internet. There are 1158 footnotes. A list of tables and figures is given in the beginning.

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Framework

Before the main content of the dissertation the general framework of the conducted research is presented. The framework begins with a formulation of the principal thesis of the dissertation by pointing out what the topicality and significance of the set of problems being examined are, what the object, purpose and tasks of the study, the methods used, the scientific novelty and the positioning of the dissertation are. A distinction and positioning of the study in the scientific interests and efforts of the author is made in the framework. The introduction contains several tables aiming to present in a summarized and well-arranged manner the ideas and hypotheses to be examined in the main exposition.

Part I Introduction

The idea of establishing a “proprietary” ecology is justified in the introduction, which necessitates the positioning of property in ecology. As a rule the right to **property** is seen in its essence as an “*enemy*” of ecology because:

- a) on the one hand, it leads to land fragmentation which destroys its entirety and often disrupts the natural processes that occur in it whose realization maintains the vitality of ecosystems; and,
- b) on the other hand, it exhausts the land which disturbs its sustainability in time and often becomes the cause for occurrence of irreversible losses of natural resources the availability of which we take for granted.

Property is not a natural paradigm, and in its conventional format it aims at “improving nature by cultivating the “wildness” contained in it. In this sense is what Thomas Jefferson said in 1785, and namely: “[c]ultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds.”⁵ Property is a sign of virtue, a

⁵ See **Shaw, L.** Asteroids, the New Western Frontier: Applying Principles of the General Mining Law of 1872 to Incentivize Asteroid Mining. // *Journal of Air Law and Commerce*, 2013, No. 1, p. 143.

reward for owner's contribution towards the affirmation of the values his/her country stands for. The improvement of land happens precisely by investing labor in it: labor aimed at transforming the wild territory (the wilderness) into cultivated land (a garden).

The *substance* of the right to property traditionally includes three powers: possession (the possibility of exerting factual control over the thing), use (the possibility of extracting the useful properties of the thing), and disposal (the possibility of transferring the control over the thing in full or in part). What is decisive from economic point of view is the importance of the power to "use" which in some cases is also associated with the destruction of the thing: in the cases of the so-called "factual disposal" of a usable thing and in the course of the gradual "exhaustion" and wearing out of an otherwise unusable thing. As a whole the right to property is recognized in view of the legal materialization of a certain property interest but its substance also includes a specific power which is entirely a manifestation of the will of the owner: the power to destroy the thing in the absence of any specific benefit from doing so. It is precisely the power to destroy the thing without a publicly legitimate reason that goes, to the greatest extent, contrary to the purposes of ecology and causes the reaction of the ecological ethics.

Ecological *ethics* aims at forming an ecological consciousness reflecting man's responsibility towards the environment. It is related to the *preservation* of nature in its natural form and to ensuring its sustainability to be benefit of the future human generations. Therefore, the attainment of morally significant results in the field of the policies committed to ecology is associated mainly with the consistent ignoring of property and where this is impossible: with the introduction of a system of measures to restrict it. The main "helper" of ecological ethics when introducing a system of restrictions is administrative law whose tools are used by the state to try to bring the destructive component contained in private property under control.

The justification of a "**proprietary**" *ecology* aims to make property an "*ally*" of the actions intended to protect nature. This ecology is "proprietary" because in order to attain its objectives it makes use of property-law tools, and it is ecology because it is associated with the introduction of specific regulations of ownership of the living (bi-

oecology) and non-living (landscape ecology) natural components viewed in their ecosystemic and cultural unity.

The proprietary ecology is manifested, *for example*, in the following possible “uses” of tools from the property law in order to attain ecological objectives:

- affirmation and differentiation of public property as a form of husbandry-style management aiming at protection of nature (protected areas);

- justification of the so-called “defensive” property whose main objective is to exclude to the greatest extent possible the human impact on certain natural habitats (nature reserves);

- introduction of a system of restrictions of ownership of the living organisms (animals, medicinal plants, landmark trees, etc.);

- distinguishing several types of property over the “living” things, i.e. the things constituting living biological organisms (corporeal property, intellectual property and sovereign property);

- the introduction of special rules on the interaction among the different types of property over of the living organisms for the purpose of protection of biological diversity (access to genetic resources, prohibition of changes to genetic identity);

- freedom of natural spaces for the purpose of ensuring the natural cycles, including both the circulation of chemical elements in the non-living nature (natural course of water, air circulation, etc.) and the free movement of wild animals (freedom of game, freedom of forests, regulation of required distances, prohibitions on placing of walls and fences, etc.).

On a global scale the ecological causes are increasingly relying on solutions related to private property. The belief in the efficiency of property-law solutions is associated with the legitimizing of property by labor which is traditional for Western philosophy, whereupon property “yokes the fallen and sinful nature of human beings to the Biblical command to labor”⁶. Property multiplies and gives its owner fruits as a reward as at the same time it “pacifies” the relationships between humans by clearly defining the boundaries within which every owner realizes his/her “proprietary” power. It is precisely

⁶ See *Rose*, C. The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems. // *Minnesota Law Review*, 1998, No. 1, p. 130.

because of these positive effects of property that the environmentalist movements tend to invest ideological efforts in “*propertization*” of natural resources led by the maxim that “the more things that get turned into property, the better”⁷.

Simultaneously with that there are also some skeptics who take up an “*antiproprietary*” position worrying that in environmental law there is “too much property” and property stems, as a rule, from the “rhetoric of fixedness” which cannot take into consideration the dynamics of the natural processes and the entirety of the individual components in the ecosystems.⁸ Where property is recognized some individual items of movable property and immovable properties are created, land is fragmented which leads to “imbalance, and imbalance may lead to conflict and waste”⁹. The ecological protection ensured by such property is discriminatory because it “serves” only certain components within the ecosystem (the so-called “protected species”), and, respectively, only certain ecosystems chosen by humans (the so-called “protected areas”), and the remaining ones are ignored or marginalized. In order to avoid such discrimination there must be fewer things, and this means that those fewer things will be of greater size (holism) and more complex in their structure and inner interactions (integrativity). Ecosystems, which meet to the greatest extent the requirements of a holistic ecological ethics, are precisely such complex and dynamic natural data.

In the introduction a system of different **types of property**: private, public, defensive and integrative, is proposed as certain distinctions are made in view of the possible focus and holder of the property. Private property and public property are *economically*-oriented types of property treating natural components as things or as resources. As a rule, the effect of their application leads to a division of nature into separate pieces (properties) enclosed in their boundaries and subject to certain interest (individual or common). Public property allows for a relatively greater summarization of things to a state in which they exist as resource but this does not eliminate

⁷ See **Rose, C.** Opt. cit., p. 139.

⁸ See **also Shaw, L.** Asteroids, the New Western Frontier: Applying Principles of the General Mining Law of 1872 to Incentivize Asteroid Mining. // Journal of Air Law and Commerce, 2013, № 1, p. 151.

⁹ See **Rose, C.** Opt. cit., p. 170.

the economic essence of public property. This is so because resources are economically significant assets out of which one can obtain things or develop activities capitalizing certain use in the form of use benefit for a certain group of people – even if not only the present-day but also the future generations within a country or in the world as a whole are included in a group.

Defensive property and integrative property are *ecologically-oriented* types of property that treat natural components as a reserve of a kind (reserves) or as complete unities (ecosystems). As a rule the effect of their application leads to unification of natural factors although this is attained in a completely different way. If defensive property is “classical” exclusive property that relies precisely on the power contained in it to reject any claim for human impact on the thing (in order to preserve it as a nature reserve) integrative property is non-traditional, “inclusive” property that allocates the power it contains among a wide range of interests with respect to the thing (in order to preserve it as a natural ecosystem).

Defensive property is to a much greater extent “property” in the sense of the conventional property-law idea of ownership as control exercised with respect to a specific thing. What is specific about it is the direction of that control: it is not aimed at transformation and use of the thing (without being disturbed by other legal subjects) but at taking out and preservation of nature (out of the range of any human impact). In this sense defensive property can be designated as anti- or contra-property: one that stands “against” any other economically-oriented type of property requiring the use of the thing. Defensive property looks like “vacant” property because it is exercised entirely as repelling the impacts from other subjects without including a positive impact with respect to its own object. Land is left to the natural processes taking place in it. Property is only the defense wall behind which such processes can be realized without the interference of unwanted human impacts.

Integrative property is to a much greater extent a counterpoint of the conventional property-law idea of ownership as exclusive control because it offers an anti-individualistic and pluralistic format of “loose” possession. What is decisive about it is the allocation and not the concentration of control as part of the substance of owner-

ship. In this respect it considerably approximates the idea of property of indigenous (native, aboriginal) population, which functions as part of the harmony in the “earth-human” interaction. Ownership is a form of inclusion and consideration of a number of factors which are governed and managed on behalf of a single ecosystemic whole in which man is just a part, albeit an important one. Integrative property is not an exclusive control but a shared responsibility. In that directedness of integrative property and compared to the defensive property (as a form of counter-property) it could be examined from the position of the classical understanding of property as a form of post-property: ownership that has abandoned the concentrated control and the exclusive power.

If defensive property is “strong”, even ultra-property – *power* over the thing that is concentrated and intense in its exclusivity to the highest degree, integrative property is “loose”, rather infra-property – *care* for the land that is broad to the highest degree in its dispersion and diffusivity. If the environmentalist mechanism of the two models is compared it should be noted that the defensive property is fundamentally exclusive one (in this sense it is the contrary of integrative property) while the integrative property attains its warding-off effect (and in this sense it is also “defensive”) by bringing together as broad range of interests as possible (by diffusion).

The model of *culturally determined property* as well as the concept of *common heritage of mankind*, which is decisive for the regulation of property in outer Space and celestial bodies which are becoming increasingly accessible for humans, are also presented. The concept of the culturally determined property of “indigenous” population is inapplicable in Bulgaria since there is no “indigenous” population whose historical and present-day identity must have been shaped in an exclusive manner out of their link to the land. Nevertheless, knowing that concept can be especially fruitful when the so-called “landscape policy” is conducted, which is a manifestation of the special care for the esthetic and contemplative non-living nature taken by the state and municipalities. Similarly, the Bulgarian state can hardly be listed among the “space” countries and therefore the theoretical disputes regarding the ownership of asteroids will most likely be received by Bulgarian theoreticians of property rather as

an exotic object of curiosity. Nevertheless, the knowledge of those disputes can be efficiently used when making changes to the national legislation in response of the moral requirements posed by contemporary ecological ethics.

The main emphases and contributions are formulated in a tabular format in the same sequence as presented in the dissertation.

Part II Main Exposition

Chapter 1 Non-Living Nature: the union between the landmark and the ethics of home

The first chapter of the exposition is dedicated to non-living nature protected as a “face of the Earth” (landscape) and as a context that makes the biological life possible. Non-living nature is identified as beautiful spaces (*landscape*) which should be preserved in their *esthetic inviolability*. This chapter presents Roger Scruton’s conservative approach to preservation of nature in which love for home as part of the “territorial loyalty”¹⁰ plays a principal part. Love for home is closely linked to the concept of the “near” environment and is an important component of the “spiritual archaeology of the settlement of mankind”¹¹. It is precisely the feeling of attachment to a certain territory that is the “motive of common people”¹² on which our respect and duties to the future generations can be built.

In contrast to the living organisms whose claims for an “elevated” (compared to the remaining things) legal status are based on the specifics of their genome (as part of the biological diversity) or of their nervous system (as a precondition for feeling pain), the non-living nature counts on the *sight*. What is being protected in the landscape (the landmark landscape) is the view, the scenery of an area which is constructed in the eyes of the beholder. If in the attempts to justify the rights in favor of the living organisms the rhetoric looks for their own worth that should make them independent from the anthropomorphism of the law, in the protection of non-liv-

¹⁰ See **Scruton, R.** *Green Philosophy*. 2011, p. 193 [of 2019 Bulgarian translation]

¹¹ See **Scruton, R.** *Op.cit.*, p. 26 [of 2019 Bulgarian translation].

¹² See **Scruton, R.** *Op.cit.*, p. 28 [of 2019 Bulgarian translation].

ing nature the regulatory mechanisms recognize man's leading role as an observer to whom nature reveals itself as a landscape. The hand that owns and uses the thing is stopped by the distance of the look that sees beyond the specific land property in order to find the outlines of nature itself. Such staring into the beautiful enables non-living nature to obtain worth that is independent from property. Although every view is, first and foremost, speculative it offers a code to decipher the nature which is different from property. Even that alone makes the landmark landscape an important ally of every ecological ethics.

Landscape is not merely a *territory*, it is the specific countenance of that territory. Territory can be organized in two manners: by introducing a structure for its economic use (territory's zoning) and by delineating some outlines for its esthetic occupation (territory's countenance). Territory's zoning and territory's countenance are two different formats in human reception and interaction with the surface of the Earth. Both of them are related to property but in a different manner. While territory's zoning works in "the best interest" of property by making it possible to extract the maximum sustainable benefit that can be realized within the boundaries of an immovable property, the regulation of territory's countenance (landscape) limits the powers of the owner by forcing him/her to synchronize the use of the thing with the use of the remaining neighboring things with which they form a common cultural and historical ensemble.

If territories' zoning is based on the predominant intended use of the properties included in them as certain technical requirements (e.g. distance from one building to another, minimum dimensions of land properties, floor area ratio, etc.) are introduced in view of the attainment of such intended use, the landscape policy aims to bring into conformity the esthetic ratios of the neighboring things in the husbandry-style management of the territories. What is decisive is not the usefulness of the thing (in terms of function, use, intended use) but the *beauty* (the simultaneous landmark and uselessness) of the landscape. The eye unites where the hand owns. Beyond the romanticism of private property which the beautiful texts of Roger Scruton refer to the beauty, and the nature along with it, can only be preserved by creating a new dimension of regulations around

property which do not rely solely on the “good morals” and “proper manners” of the owner-neighbors but apply certain state policy.

Only the nature that is owned by man can be beautiful. In this sense *property* is the first to step onto the surface of the Earth and *renders it safe*. It is only then that it is the beauty’s turn. After the initially established factual power, in the second place, the earth is conquered by man by saturating it with narratives. It becomes a space for storage of time by means of a common memory. In contrast to property whose upper limit is the materialization of a personal story within the limits of a thing the landscape embodies a story which is tribal, national, European or even global. It is precisely the history invested in the land that turns the latter’s countenance into a part of human identity. Adorno is convinced that “[w]ithout historical remembrance there would be no beauty.”¹³: natural beauty is merely “purportedly ahistorical,” it always has its “historical core” which legitimizes and relativizes it at the same time. In this sense “[n]atural beauty is suspended history, a moment of becoming at a standstill”¹⁴. Noticing the natural beauty presumes the existence of a “collective sensorium” – the existence of people who share not only common boundaries (neighbors) but also a common story (inhabitants, citizens, fellow earthmen).

The concept of landscape that brings together the surface of the Earth in a spectroscopic way (in/as one sight) inevitably works against property. Instead of dividing the land in land properties the landscape arranges the things in an ensemble creating beauty out of their entirety thanks to the shared history of the beholders. The landscape provides the territory with the necessary holism in order to limit the environmental damage from particularistic effects of property. The ratio of the things within the territory’s countenance is esthetic, not technical. In this sense landscape is undoubtedly a concept that functions as a form of *limitation of property*. Property encloses the land into boundaries separating the specific thing (such as a land property) making it available to be used under the conditions of inviolability. The landscape situates property in the

¹³ See *Adorno, T.* Aesthetic Theory, translated by Robert Hullot-Kentor. Continuum: London & New York, 1997, p. 65

¹⁴ See *Adorno, T.* Op. cit., p. 71.

context of the look by requiring its holder to take into consideration the esthetic correlations of the neighboring things.

However, beauty is not merely an agreement that has emerged spontaneously, localized along the lines of (good)neighboring but also a *public good* – a common resource that has not only national but also a European significance and therefore necessitates much more serious intervention on part of the public authorities when restricting private property. Although it remains inviolable property must be embedded into an ecologically- and socially-responsible architecture by means of forms of husbandry-style management that exist beyond its economic contents. For this reason the role of the state and the municipalities in preserving natural beauty should not be underestimated.

Chapter 2 *Microscopic Life:* pathogens, “wild” viruses and endless mankind

The second chapter of the exposition meets the **challenges** raised by microscopic life and *pathogens*, in particular: viruses, bacteria, and other pests. This matter is quite topical if one considers the pandemic which engulfed the world in 2002 and which was caused precisely by such an “invisible” pathogen. The exposition relies on the views of Hans Jonas according to whom the most specific thing about man when compared to all other living creatures is the human capacity of being responsible. Responsibility is the “*burden of freedom*”: “Man is the only being known to us who can assume responsibility”¹⁵. It is the man’s duty to take care of the preservation of nature. This duty exists objectively: even without being subjectively perceived. Man must take a number of actions that go beyond ethics and step into the domain of the political. These include “to sharply reduce our habits of excessive consumption,” “to lower our celebrated ‘Western’ standard of living” and the greed that goes along with it and much more “at least temporary economic suffering”¹⁶.

Although the *virus* can be included into the domain of the living by way of a certain compromise: considering the circumstance that

¹⁵ See **Jonas, H.** “Toward an Ontological Grounding of an Ethics for the Future” In: *Mortality and Morality: A Search for the Good after Auschwitz*. Evanston: Illinois: Northern University Press, 1996, p. 101

¹⁶ See **Jonas, H.** Op. cit., p. 109.

it can “live” only through and thanks to the vulnerability of another living creature it is nevertheless part of nature: of its ecological equilibrium and of its gene pool. Properly speaking, the ethical question is whether it is also part of man’s responsibility and whether there are any limits where the extermination of viruses organized by man must stop? Can we accept, beyond the usefulness and irrespective of any condescension, the existence of a moral duty not to destroy viruses that are deadly for human beings? Are viruses part of the future of responsibility outlined by Hans Jonas?

In order to answer that question the exposition presents the story of another disease: *smallpox*. For thousands of years smallpox has caused death, pain, blindness and fear in people. Today, smallpox is a disease that has practically been eradicated as a result of a large-scale campaign conducted by the World Health Organization (WHO) in the 1970s. However, the virus that causes it, the variola virus, is still being stored in well-guarded freezers in the USA and in Russia. After the eradication of smallpox as a disease WHO has repeatedly (for the first time in 1986 and many times in the 1990s) called for the artificially stored samples of the virus to be destroyed but its attempts have been unsuccessful so far. Maybe in addition to certain countries’ desire to have a monopoly over the virus the reason why is also the circumstance that the fulfillment of WHO’s call would be a “monumental event” whereupon mankind will make for the first time the willful decision to destroy another biological species by wiping it out of the genetic heritage of the earth¹⁷.

David Koplaw is one of the researchers of the ethical dimensions of the battle against smallpox. He believes that the transfer of the legal discourse onto the microscopic level of viruses is an accomplishable task. In his opinion “the logic of interest” could survive as in favor of the virus there should be identified and recognized at least the interest in avoiding the irreversible damage of its willful and unnecessary *complete destruction*. Every living being, not matter how unpleasant and harmful for human beings, has its place in nature and its importance for the maintenance of nature’s balance. In some cases mankind knows what the manifestation of

¹⁷ See *Koplaw, D.* Deliberate Extinction. Whether to Destroy the Last Smallpox Virus. // *Suffolk University Law Review*, 2004, No. 1, p. 2.

that contribution is, in others it can only guess. The complexity of nature requires that people should not take actions for the irreversible destruction of biological species. Moreover, where the price for maintenance of certain stocks of the variola virus amounts to some trivial marginal costs for electricity and security the concern for the biological diversity should apply with priority over any economic considerations whatsoever.

The question concerning the moral commitments of mankind to viruses is most closely associated with the idea of preservation of the existing **biological diversity**. This idea has its serious legal dimensions, also including in Bulgaria. Pursuant to article 2 of the Convention on Biological Diversity (CBD) "biological diversity" means "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part". This includes "diversity within species, between species and of ecosystems". The legal institution of the protection of biological diversity manifests a specific visibility of life on a *micro-level* which is also protected as a "genetic resource" – as a model of nucleic acid (DNA or RNA) through which certain evolutionary potential has been realized. The model of protection remains "corpocentric": a bio-chemical body needs to exist, a micro "corpus" (such as the virion in viruses), which should be preserved and owned by a specific subject.

The separation of the genetic from the biological enables the emergence of a new type of **property**: the sovereign property over genetic resources. Irrespective of who possesses them the state is the owner of the genetic resources from natural flora and fauna of the Republic of Bulgaria (article 66, paragraph 1 of the Biological Diversity Act). The property of the state is in essence a right to *access* the genetic resources contained in a thing that may be owned by another person. The property of the state is peculiar, "deeper" property: it is not over the thing but over the genetic resource contained in it. Unfortunately, BDA says little about that property of the state. Thus, there are *several* "properties" over the same living organism existing *simultaneously*:

- first, a "pragmatic" ("thingish") property which is being owned in view of the "liquidation" of a specific intended use related to the

actual usefulness for man (for example: the plant as part of the home garden). This property may be owned by everyone. This is the property-use the property law deals with,

- second, a “nature conserving” (sovereign and “genetic”) property granting the right to access the viable heredity hidden in every cell of the living organism (for example: the specific DNA of the respective plant species). This property is given to the state. This is the security-property which is protected by administrative law, and

- third, a “superior” (intellectual) property which ensures control over the very substance of the thing, makes its existence possible both on a corporeal and on a genetic level (for example: the new plant variety created). This property is recognized to the benefit of the author. This is the design-property that falls within the scope of the intellectual property right.

The second “property” limits the “first” one, and the “third” has the strongest “trump”. The state “holds” the owner but the designer is “creator” who is “above” the state. The difference between the specified three dimensions of property is not merely functional as, for example, is the case with the existence of a thing with several different intended uses each of which can justify a separate type of property in favor of different persons. The tremendous increase of man’s power over nature makes him capable not only of destroying specific individuals and populations but also of completely obliterating entire biological species off the face of the earth. It is precisely this that requires the affirmation of *sovereign property* of genetic resources as a “brake” of a kind that exists in parallel with the right to property and sets certain limits on the owner’s ability to destroy the thing when it has remained one of the last or even the last of the respective species. The last specimens of any biological species, regardless of its physical characteristics and pathogenicity should enjoy absolute protection against destruction, even by its owner.

This chapter of the exposition presents the author’s position on what the meaning of “wild”, to which one can also add the viruses, is. Thus, ***the wild*** is defined as that part of living nature whose growth does not conform to the interests of man, and in many cases is their alternative. The wild is life as it would exist beyond any human intervention: *life without the human being*. The non-living components

of nature can be designated as wild ones only because of their connection to the living organisms with whom they form together a single ecosystem. The concept of wild includes not only wild plants and animals but also all other forms of life, including microorganisms. Depending on the impact the wild has on man and the relation it has with him it can be individualized into two categories.

The first category is the wild that exists *passively* (the wild as the natural state of nature): living organisms that do not stand in man's way and do not harm him although they occupy habitats that can be used by man. Man's relation to this "format" of the wild is one of competition which is being won to a greater and greater extent by mankind. This victory is associated with occupying an increasingly bigger area of the planet by human habitats which leads to the emergence of a threat to the existence of life itself and, in particular, the complex life, i.e. the multicellular organisms which are the ones most commonly meant when one speaks of "biological diversity."

The second category is the wild that manifests itself *actively* (the wild in the narrow sense): its very existence poses a physical threat to man who identifies it as a resource for the life of the wild. Man's relation to that "format" of the wild is one of defense since its existence poses a real physical threat to human life and health. The big "wild" animals that used to be dangerous to humans have long since been exterminated by him (hunted for thousands of years) and the last remaining specimens of the respective biological species have a rather decorative and representative function (raised in zoos, rescue centers and botanical gardens). The microscopic "wild" organisms were discovered by mankind several centuries ago and due to the fact that they are invisible to the human senses they have been underestimated and are not yet exterminated (with a few exceptions, the smallpox being considered one of them). It is precisely to the "active" wild that predators and parasites belong to.

The existence of a number of biological agents that are threatening to humans leads to the separation of a new field of knowledge designated as "**biological safety**". It is defined as a combination of knowledge, techniques and equipment used to manage or store potentially infectious materials in laboratory environment in order to reduce or prevent harm to the health of laboratory assistants,

other persons and the environment. The *health risks* caused by microorganisms are studied, including the already mentioned prions, viruses, bacteria, barm, mould and other parasites in food, forage, cosmetic products, packaging and devices used when processing foods. Life per se turns out to be not only the “greatest gift” of nature but also a dangerous mechanism that should be neutralized in certain cases.

From its emergence as a biological species man has been in constant *struggle* with certain components in nature and if man wants to continue to exist he must not win conclusively that struggle. Antagonism and counteraction are part of life in nature alongside the mutually beneficial interaction and symbiosis. However, the struggle is not a war and its outcome should not be placed into the “win-or-lose” disjunction. The fight with viruses is part of the established ecological balance between humans and microorganisms whose importance becomes visible and it is not until the balance is disrupted that it can justify a political reaction in the form of a sate of exception. Human interaction with the world of microbes, and also with the world of pathogens, parasites and predators (“the bad” living creatures) should not be viewed as a counteraction against an enemy that must be taken prisoner, exterminated and defeated. The more victories man has against such an “enemy” the more unstable man’s position in nature will get – the more new “enemies” will pile up on the border between culture and nature; large-scale geological forces will be activated that cannot be managed and resolved in time which is constructed according to the scale of politics. Preserving the balance in a constant, sustainable struggle between different representatives of life requires that we ourselves relinquish the conclusive victory and let wild nature preserve part of the habitats on the earth. Instead of conquering everything that threatens us we must seek a stable biological safety when applying a new ethics of relinquishment and the policy of non-intervention that follows from it. We need an active return to certain forms of inaction and not a commitment to new categories of actions with an additional effect on nature.

It is precisely in the context of the ethics of *self-limitation* that a number of legal *tools* do “work”, ones that can achieve results

of practical importance in the protection of wild nature. Such are for instance: introduction of new models of ownership of the natural resources, including the regulation of different types of property (corporeal, intellectual, sovereign) existing on different levels with respect to the same biological organism; allocation of the responsibility for damages resulting from things in a natural state; relativization of the boundaries of properties in forest areas; regulation of more and more components of nature as objects that differ from the “classical” things; recognizing some, specific in their volume, rights of nature or of individual ecosystems. The quest for new – philosophical narratives when facing the set of ecological problems – should be carried out in an autonomous bioecological field where one can freely experiment by arguments and considerations that stand outside both the logic of politics and the terminology of medicine.

Chapter 3 Wild Plants: towards an ethics of free forests

The third chapter of the exposition addresses questions related to the ownership of plants: the living organisms which are treated to the greatest extent as part of the “non-living” immovable properties. The legal depersonalization and objectification of plants begins as early as their designation as “**vegetation**”. In contrast to “plants” which are independent forms of life (living creatures) “vegetation” is a term related to the special intended use of land which determines the territory’s zoning regime applicable to such land. Moreover, vegetation in populated areas is designated as “decorative” – a name which is more than telling. It is about vegetation that performs the function of scenery – both in the sense of a background and environment (stage) and in the sense of decoration and ornament (adornment) to human activity that fills with real substance the living space surrounded by the scenery. For this reason vegetation is as a whole and in principle under the control of the owner of the territory of which it appears to be part.

However, there are also some objections to this approach. In 2008, the Swiss Federal Ethics Commission on Non-Human Biotechnology presented a report in which it adopted that plants have *digni-*

ty. For example, genetic modification as a result of which the plants lose their independence, i.e. their natural reproductive capacity (creation of sterile plants and seedless fruits). The position adopted in the report aims to defy the view of plants as passive machines that mechanically perform the growth programs for growth, survival and reproduction stored in their genome. Plants are sensitive, adaptive and active living creatures which possess their own, albeit specific, subjectivity (perceptivity) and therefore the humans' relations with them should be set in conformity with the circumstance that every plant has its own life that is independent from us.

The *zoocentrism* adopted by the Western culture is pointed out as one of the main reasons for ignoring the moral significance of the plant world, although it represents a great part of the biomass on the planet Earth and it is precisely the plants that make possible the existence of animals and humans. Zoocentrism is an approach to plants whereupon they are perceived and assessed neither in view of the specific manner in which they interact with nature, nor in view of their independent significance but as a stage of biological life's evolution towards its highest form: animals, including humans.¹⁸ When comparing plants and animals the underdevelopment of the former is pointed out and they are placed as the animal world's bottom of a kind. An increasing number of scientists are opposed to such human-dominated *hierarchy* in biology as a result of the adoption of which the plants are entirely excluded from the circle of moral problems. Some ecological accusations are leveled up also against Christianity which is deemed to "legitimize" man's dominant position compared to nature. It legitimizes man's importance to such an extent that it is one of the most anthropocentric religions known to man. Christian ecotheology takes up the task to answer those accusations by emphasizing the idea that man is not nature's despot but master.

The inclusion of animals into the human moral world is not necessarily related to the recognition of rights in favor of plants (moreover, of rights that cannot be violated by humans) and should be viewed as a mechanism for countering their over-exploitation

¹⁸ For further details see **Hall, M.** *Plants as Persons: A Philosophical Botany*. State University of New York Press, 2011, pp. 4-12, 26-29.

through the dominant role of property in the relations between man and nature. The dignity of plants could be the conceptual structure enabling a certain reorganization of the content of the right to **property** by outlining some specific boundaries when exercising it. Undoubtedly, the “interests of plants,” if recognized, will not have the same weight as the interests of animals and humans. But one right that is central to man, i.e. the right to property – could turn out to be an appropriate place for their “unfolding”. Just as the contents of the right to property over animals (seen as things) is limited by the prohibition of any manifestation of inhuman treatment and cruelty with respect to them (seen as living creatures) so too ownership of plants (seen as things) could be *transformed* by recognizing their moral significance (also seen as living creatures).

In order to change the manner in which we use the plants we must first change the way we own them, i.e. we have to introduce appropriate restrictions of the ownership of them. There are currently such restrictions in the Bulgarian legislation. It is notable that there are clearly identified favorites among the plants protected by law: the trees. Most of the statutory texts stipulating protection of plants concern trees and, partly, bushes, which the plant world is considerably more diverse. By analogy with the concept of “zoo-centrism” the legal attitude to ensure protection mainly to the trees can be designated “*dendrocentrism*.” The reasons for its adoption are more than obvious: the comparable size of trees in relation to the dimensions of human body which makes them appropriate for different manners of use on part of people as well as the relatively greater economic (extractive and recreational) value of trees which is a reason for setting apart special forest areas.

When justifying a specific model of ownership of plants an analogy can be made with some already existing mechanisms for restriction of ownership of animals. Thus, the owner of an animal may not display inhuman treatment or cruelty to the animal although he owns it. Although the specific contents of the restrictions would be different the transfer of this approach from animals to plants would enable certain *moral considerations* related to the recognition of plant’s own worth to become part of the boundaries of the ownership of them.

One possible demonstration of this approach is the legal regulation of forest territories and especially the treatment of **wild forests**. Preserving the natural state of wild forests pursues environmental purposes and aims to satisfy an important social need: to preserve the sustainability of ecosystems which is a premise for the normal existence not only of the population of the Bulgarian state but also of mankind as a whole. In order to attain those purposes the ownership of certain forest territories can be made available as a means of physical exclusion of the possibility of another's impact (duty to protect). Such a defensive (warding-off) property aims at protecting the thing against direct economic exploitation to the benefit of a specific person or of the community as a whole whereupon the preserved natural processes in nature indirectly favor the entire mankind. Keeping the thing is related to a specific use with no impact whereupon the beneficiary is every man but not as an immediate owner but as a third-party beneficiary whose interests are represented by the state in its capacity of the bearer of public property. If the concept of defensive property is adopted one could look for the justification of a concept of "*closed forests*" where no state or human intervention is allowed but at the same time there is a possibility for a fee non-economic access to the benefit of every human being.

Preservation of life in wild forests requires the preservation of the **natural movement** of different natural components through the boundaries of individual immovable properties. In the contents of the right to property over forest territories is intertwined a specific administrative regime aiming to preserve the natural existence and integrity of natural ecosystems irrespective of the boundaries of property. Thus, as a rule, owners and users of forests and lands in protected areas cannot fence their properties (article 14, paragraph 2 of Protected Areas Act), and cannot restrict movement on the roads and marked trails that pass through them (article 14, paragraph 1 of Protected Areas Act). These prohibitions aim to enable the existence of "*free forests*" where the flow of life is not interrupted and modified by the exclusive claims for ownership of individual parts of nature. The movement of waters and game as well as the special case with the swarm that has been examined in the exposition are examples in

which the property-law regime takes into consideration the natural peculiarities of the things to which a property right is conferred. In is only by way of such consideration that takes into account the peculiarities of nature that the success of an environmental legislation aiming to preserve nature in its wild (free) condition can be ensured.

Chapter 4 The Genes: Identity and Modification of Biological Species

The Fourth Chapter of the exposition is dedicated to the most fundamental characteristic of biological life: heredity. Pursuant to article 3, letter “h” of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity “**living organism**” means any *biological entity* capable of transferring or replicating genetic material. The status of living organisms is explicitly recognized for viruses and viroids that need other living organisms to reproduce the genetic material they carry as well as for sterile organisms created as a result of the so-called „synthetic biology.” Thanks to the development of science, especially over the past several decades, man has gained access to a number of tools enabling him/her to intervene more and more actively in the manner in which life transfers its heredity. Chapter 4 of the exposition traces out precisely the tension between heredity in biological life, first, as a *genetic resource* (information that can be used and manipulated by people) and, second, as *genetic identity* (information that defines the respective biological species and should be stored), by placing special emphasis on the place occupied by the concept of property within such tension.

The main **question** deals with *what and to what extent* is decisive: identity of adaptability of biological life. If the answer is that what is of decisive importance is the *identity* of biological species, including man, the regulations must invest in our capacity to preserve what we are (to preserve “ourselves”). This means that there must be stipulated increased guarantees against any form of encroachment against the natural genetic resources in order to preserve them in the form in which they have reached people. If the answer is that what is of decisive importance is the *adaptability* of biological species, including man, the regulations must stipulate our capacity to change what we are (to become different). This means

that experiments enabling the people's abilities to establish control over the mechanisms of evolution must be encouraged.

Protection of heredity has a different scope in different living organisms. The refusal to grant patent protection to part of inventions related to modification of genetic identity of *animals* is not a prohibition to carry out such modifications. Due to the absence of such a legal prohibition the possibility of performing genetic modifications remains within the scope of powers of the corporeal property existing over the respective biological organism.

It should be noted that the regulations excluding the patent protection and market realization refer only to animals and not to *plants* – a fact that shows that the Bulgarian legislation is also influenced by the so-called “zoocentrism,” which is manifested in much greater, in terms of its scope, legal protection of animals compared to the protection afforded to plants due to animal's greater propinquity with humans.

In the cases where biological organism belongs to the species of *Homo Sapiens* it is a subject of law associated with the notions of dignity and privacy determining the adoption of a number of protective regulations. Thus, the law announces that *human body* at the different stages of its formation and development as well as the mere discovery of one of its elements, including the sequence or partial sequence of a gene, cannot constitute a patentable invention (article 6, paragraph 4, sentence 1 of Patents and Registration of Useful Models Act). Human genome is also protected within the framework of an assisted reproduction procedure.

The review of the legislation concerning the possibilities of manipulating the genome of living organisms, including human genome, leads to the *conclusion* of the existence of a dispersed and incoherent statutory regulation deprived of a clearly formulated principled basis. The existing specific prohibitions are in different special laws and are contextually linked to the social relationships regulated therein. There is no all-round systemic set of statutory acts regulating either human genome as a type of genetic resource, or the different forms of property over the living organisms: corporeal (Property Act, State Property Act, Municipal Property Act), intellectual (Protection of New Plant Varieties and Animal Breeds

Act, Patents and Registration of Useful Models Act) and sovereign (Biological Diversity Act).

The question concerning the genetic identity is essentially a question about the **boundaries** between the individual biological species. It is precisely here that the exposition presents the ethical and legal aspects concerning the creation and treatment of the so-called “hybrids” and “chimeras”. If hybrids are known forms of human cultivation of biological species – creation of new plant varieties or animal breeds by way of selection, chimeras are a relatively new challenge to regulations since they usually presume intervention in the embryo phase of development of the respective organism which became possible only in the past decade. Creation of hybrids and chimeras is associated with the increasingly fashionable concept of “*biohacking*” of non-human living organisms whereupon the purpose is to observe, get to know and control biological processes that would be important for the existence, development and survival of mankind.

The *transfer* of genes for the purpose of creation of chimeras has been traced out along several lines: within a single biological species; between representatives of two different biological species (“interspecies” chimeras), neither of which is Homo Sapiens; man-to-animal (interspecies chimeras with human stem cells); animal-to-man (the so-called “*Riants*” or “*panbiotic chimeras*”). The emphasis of the exposition is placed on the common objections against the artificial creation of **animal chimeras with induced human stem cells** (interspecies chimeras with human stem cells).

The first group of considerations is associated with the so-called “*argument from the unnatura*” according to which creation of chimeras with human stem cells is an act of inadmissible human intervention in the natural order of things. This argument can be summarized thus: creation of chimeras is against nature and is therefore wrongful. It is quite inadmissible to violate the natural boundary between man and the remaining living creatures. Man must conform to his/her place in nature and must not change things (s)he has not created. Violating the genetic identity of animal species could have some exceptionally harmful and irreversible consequences which cannot be effectively controlled by man. The complexity of the world

and, first and foremost, of the ecosystem interrelations existing in it is beyond man's powers and (s)he should not intervene provided that (s)he cannot foresee the consequences of his/her actions and guarantee the possibility of taking hold of them.

The second group of considerations is associated with the so-called "*argument from the moral confusion*" according to which creation of chimeras with human stem cells is an unnecessary change which is beyond the powers of the existing human public order. This argument can be summarized thus: creation of a creature that cannot be qualified as either entirely human, or as entirely animal, would lead to the emergence of some substantial difficulties in the functioning of human society whose regulatory mechanisms are based on the bipolar "human – non-human" distinction around which one of the most important legal axes is formed: "legal subject – object of law". This creates a danger of destroying the existing order and some well-established social institutions by blocking useful social practices and regulatory mechanisms.

The third group of considerations is associated with the so-called "*argument from the Borderline-Personhood*" according to which the creation of chimeras with human stem cells is an intolerable increase of the status of animals. This argument can be summarized thus: creation of chimeras with human stem cells leads to multiplication of the problems with the status of the so-called "borderline", non-typical human personalities. Even now there are animals (chimpanzees, bonobos, gorillas, orangutans) whose psychological characteristics substantially approximate them to humans. This has necessitated the recognition of a moral status with regard to them, which is close to human's full moral status. Thus, for instance in Europe and in Bulgaria there is an established prohibition to use apes as testing animals. This prohibition is motivated with special force in studies aiming at the creation of the so-called "neural chimeras" – development of human neurons in the brain of an ape.

The fourth group of considerations is associated with the so-called "*argument from human dignity*" according to which the creation of chimeras with human stem cells is an intolerable lowering of man's status. This argument can be summarized thus: creation of

chimeras with human stem cells violates human dignity. Dignity is the unconditional and absolute worth of a being, which is based on certain morally significant cognitive and emotional abilities: participation in social interactions, rationality, capacity to make autonomous decisions, participation in complex communication, sympathy, etc. It is precisely dignity that renders problematic the transfer of certain human genes, and, along with them, certain human abilities, into the organism of other animal species condemning them to a life without dignity. Once they get into a non-human body the said “genes-abilities” cannot be manifested and develop in the manner they would have done so in a human body. Therefore, the act of transferring human genes into an animal body is act of belittling of the human abilities related to them, and thus, an act of insult to human dignity.

The fifth group of considerations is associated with the so-called “*argument from the moral status*” according to which creation of chimeras with human stem cells could weaken the public sensitivity over man’s moral status. This argument can be summarized thus: creation of chimeras with human stem cells leads to improvement of the moral status of animals which cannot be accounted for and taken into consideration when carrying out experiments with them. If the humanization of animals does not lead to a change in their treatment this can lead to an increase of the encroachments against what is considered significant and subject to protection in humans. If it is permitted to carry out medical experiments with creatures that are “artificially” been approximated to human abilities this could also be a step towards lowering the moral status of human beings themselves.

The entire debate on the moral admissibility of creating chimeras is based on the paradigm of **thingification**: the treatment of genome as a key for mastering the body-tool by the biological improvement of which man can overcome his/her limits and vulnerability and also re-draw the boundaries between biological species. Bulgarian *legislation* pays attention solely to the genetic identity of animals (and not of plants and other living organisms) refusing to provide patent protection to methods of modification of the genetic identity of animals where there is a danger that doing so would cause them suffering without any substantial use from medical point

of view for humans or animals (article 7, paragraph 1, item 1, letter “d” of Patents and Registration of Useful Models Act). This regulation must be deepened and further developed also with respect to the remaining living organisms.

Chapter 5 The Earth: **an ethics facing the future generations**

The fifth chapter of the exposition deals with the protection of nature in time: by examining the moral relationships between the present-day and the future human generations. Posing the question of inter-generational responsibility begins with the hypothesis of the so-called “wrecked” or “**broken**” future¹⁹ Tim Mulgan imagines a future in which the resources are insufficient to satisfy the basic needs of humans because certain natural events (e.g. climate chaos) make *uncertain* not only the existence of the individuals already born but also the future of the next generations whose life turns out worse than the life of their predecessors. In the “broken” future the society has lost the level of improvement and prosperity where its members can satisfy all of their basic needs without sacrificing their basic freedoms. The progressivist presumption that each following generation will have more opportunities and will live better than the preceding ones has been conclusively refuted, and the rights have become a luxury. Even the right to survival is not guaranteed. To cope with the scarcity of resources of the global society of “broken future” Mulgan introduces a specific political tool: a survival lottery, i.e. a bureaucratic procedure that determines who will live and who will die.

Although the scenario for a future of “broken nature” imagined by Tim Mulgan (to paraphrase what Mulgan himself says) at first looks exaggerated and quite artificial in terms of its philosophical and ethical part it poses in a willfully “vivid” manner the important question concerning the existence of moral obligations to the future generations. The question about the future is first and foremost a question concerning **time**. Undoubtedly, the time that is “most con-

¹⁹ See *Mulgan, T.* Ethics for a Broken World: Imagining Philosophy after Catastrophe. McGill-Queen’s University Press, 2011.

venient” for people and for unfolding their ethical and legal regulations is the *political time*: time that is relatively fast, and that over the past decades has accelerated to incessant crises, in which the legal norms are changing so quickly that it becomes impossible not only to fully know them (even by lawyers) but also to effectively apply them (even by the narrowest experts).

However, political time is unable to meet the challenges of *geological time*: the time in which certain peculiarities of the biological species, including the species of Homo Sapiens, are manifested. It is precisely in that time that one can observe the interaction between the humans and the other living creatures in the context of the necessity of protecting biological diversity and preventing the possible reaching of an ecosystem’s maximum capacity to maintain a certain quantity of life (the “Gaia” hypothesis) despite the desire of the biological species that dominates it to reproduce itself until it covers the entire vacant surface of the planet Earth (the “Medea” hypothesis).

The role of an intermediary between the political time which is so accelerated that it creates a feeling of jumping over, and the *geological time* which is so slow that leaves the impression of non-existence, can be played by the form of ecological time, one that brings together, once, the current times of individual living organisms into a common time of the ecosystem created by them, and, a second time, the consecutive times of several human generations into a new, politically significant, time that can generate long-term solutions and policies. The united time of human generations presumes a restructuring of the political and the legal time which can foster the development of moral sensitivity toward the problems of the people to come (the “future people”).

The concept of *property* is best “felt” where it is born: within the political time. It almost completely loses its meaning within the geological time: this is a time that does not distinguish between owners because it does not manage to retain anything fixed as the same thing that can be owned. Within the “medium” – ecological – time in which the geologically significant changes in nature can be historically traced out, property still withstands its conceptual foundation although the things are not dematerialized to “resources” – a specific form of usefulness of the natural components that is character-

ized by certain durability and can be used by communities of people rather than by particular individuals.

Chapter 5 summarizes *three alternative lines of protection* of nature for the future generations: protection by reconsidering the concept of harm (by stipulating civil, criminal and political responsibility before the future generations); protection by extending the concept of legal personhood (by granting legal personhood to mankind as a biological species or to nature as an ecosystem entirety) and protection by re-arranging the contents of property (by introducing specific limitations of property in time, including division of property in time, recognition of sovereign rights of the state over certain objects, etc.).

The first line of protection is associated with stipulating different mechanisms of responsibility in the present for a possible *harm* that the future generations would suffer. One of the problems most commonly posed when justifying the necessity of preventing a possible harm the present-day generations can cause to the future ones is the *problem of non-identity* of the victim (the “non identity problem”): part of the people to be born, i.e. part of the future generations, will owe their existence to the decisions made regarding the policies of the future being carried out²⁰. Similarly to the concept of thing at first glance the concept of harm has an imperceptible time dimension which is crucial for its boundaries. Harm is possible as a concept only within the framework of a certain time. The process of “realization of a cause – causal relation – occurrence of harm” can be traced out only in a certain format of time. In order to preserve the existing concept of harm within the framework of the “fourth dimension” of the “long time” there must be greater tolerance to the multiple, stretched-over-time causality. In principle such tolerance is more characteristic of criminal rather than civil law. Therefore, one of the proposals most commonly made for protection of future generations is by means of a special category of “crimes against future generations.”

As a rule international law tends to acknowledge the existence of a *new kind of crime* where it has to do with acts that have grave consequences for the long-term health, safety and means of surviv-

²⁰ See *Parfit, D.* Reasons and Persons, Clarendon Press, Oxford, 1984, p. 361.

al of an identifiable group or a collective²¹. By introducing international criminal responsibility for such crimes personal responsibility will be invoked against specific individuals who “have shocked the conscience of mankind” by their conduct by creating a danger of causing grave consequences for the environment. Among the proposed sets of elements constituting the crimes are listed actions that lead to causation of a wide, long-term and grave impairment of the environment, including by annihilating an entire species or ecosystem as well as illegal pollution of air, water or soil, including release of substances or organisms that seriously threaten the health, safety or means of survival of the members who can identify as a group or collective.

Beyond the possibilities for justification of civil and criminal responsibility with respect to the specific representatives of the present-day generations in view of causation of harm to future generations there is also an approach where the leading mechanisms are the ones for implementation of political responsibility of present-day generations before the future ones. Such mechanisms require the introduction of some special forms of *political representation* of the future generations in the process of decision making in the politics of the present. The different models proposed for the implementation of such integrational political representation are presented: creation of legislative representatives (deputies) of the future generations to represent their interests in the current political debate; appointment of an ombudsman of the future generations or a specific agency to pose and defend the question about their interests when certain draft legislation is adopted, etc. The hope is that making provisions for political mechanisms related to the husbandry-style “management” of the interests of the future generations will in any case lead to strengthening of the public interest and the sensitivity of the politicians to the need of formulating and protecting such interests.

The second line of protection of nature for the future generations is by recognizing *new legal subjects*. The more different types of subjects are recognized by a legal order, the more the regulated

²¹ See *Jodoin, S., Y. Saito* Crimes Against Future Generations: Harnessing the Potential of Individual Criminal Accountability for Global Sustainability. – McGill International Journal of Sustainable Development Law and Policy, 2012, No. 2, p. 120.

relations, and thus, the existing regulations, get dynamicized. In this respect, there is a telling case considered landmark in the Philippines²² under which the Supreme Court in Manila first admitted the possibility that present-day generations can represent the interests of the future ones. The possibility for lodging a claim on behalf of the future generations poses a number of objections, as one of them associated with the non-identity problem has been pointed out above. What is characteristic of future generations is that they are not a single subject since the more remote in the future they are, the more difficult it becomes to forecast their interests.

By creating an “appropriate” subject to be recognized as “being harmed,” i.e. as one that suffers harm within the ecologically significant time, one actually solves the already mentioned problem concerning the non-identity of future generations. To that end legal personhood is attributed to a biological or an ecological entity characterized by a greater *duration in time*. Instead of future generations (an anthropocentric version of a multiple subject) that can be at a different distance from the present and with an identity that changes depending on the political decisions, harm is attributed either to mankind as a single biological species (an anthropocentric version of a single subject), or to nature as an ecosystemic whole (an ecocentric version of a single subject) – all of them being subjects whose existence in time is characterized by considerably greater duration compared to the one of the legal subjects that we know today. The identity of mankind as a single biological species and of nature as an ecosystemic whole is visible to a much greater extent in the geological time and it becomes increasingly difficult to be taken hold of within the framework of political time. Every successful mechanism for political representation of such “geological” (in terms of their duration) subjects could have an important environmental effect.

The third line of protection of nature for the future generations is associated with solutions concerning *property*. Perhaps the most important conceptual effort here is the one aimed at the proper po-

²² See also *Puvimanasinghe, S.* Towards a jurisprudence of sustainable development in South Asia: litigation in the public interest. // Sustainable development law and policy, 2009, No. 1, p. 41-49.

sitioning of the claim to possession in time. Several different human generations can have valid claims to the same thing in *time*. The thing does not “enclose” its usefulness only and solely in the time of the generation its current owner belongs to. The claims grounded on basic needs should win in their competition with claims related to adventitious needs.²³ This rule applies irrespective of the time in which the needs in question arise and exist. It is even more expedient to abide by that rule when competition between the “adventitious needs” of present-day generations exercising the present-day political power, and the basic needs of the future generations that do not exist yet and therefore cannot directly participate in resolving the competition thus arising.

Many cyclical natural processes create their own temporal rhythms interrupted by the spaces fractured into separate things through which such cyclical processes run. Things fix the natural components for a certain time in which they can be used by people as static data. However, if such components are not timely “set free” in order to be included into the respective natural cycles the things get “exhausted” and lose their usefulness. A part of each thing “lives” in its relations with other things as it is precisely that interaction that creates space itself in which they can be used by man as per the intended uses fixed by him/her. In a number of cases such *relations* are visible for property law and lead to the adoption of specific regulations such as, for example: statutory easements for the natural drainage of waters; the prohibition of placing physical fences on forest lands, ownership of the game as a diffuse and territorially disperse but single thing, etc.

However, in most cases the pursuit of fast liquidity of the usefulness of a thing – within the framework of the time of human consumption (the rhythm of man’s biological needs) such relations get marginalized and do not receive the necessary legal protection. The fixed usefulness “here and now” should be sustainably combined with the dynamics of a long-term natural cycle within which the current use is possible. Part of the worth of the thing must be taken out and preserved beyond its current intended use. It should be linked

²³ See *Wolf, C.* Contemporary property rights, Lockean provisions, and the interest of future generation. // *Ethics*, 1995, No. 4, p. 807.

to the specific *sustainability* ensured by such thing in its interaction with the remaining things within the natural biochemical cycles in nature. The current intended use should not exhaust completely the worth of the thing, it must have certain “natural” boundary: a volume of the existence of the thing by which the latter participates in the ecosystemic processes of nature. This is valid to the greatest extent for immovable properties in which man has preserved and protected the existence of wild nature. In some of those things such as forests and natural parks it is quite visible the existence of a core of long-term (ecosystemic) usefulness that transcends their specific (economic) intended use and should be preserved as a natural heritage of a kind – a premise for the existence and welfare of the human biological species, including the future generations.

Chapter 6 *The Extraterrestrial Life:* Ethics in Outer Space

The sixth chapter of the exposition traces out one of the biggest challenges facing the mankind: the conquest of the **outer space**. This process also has some exceptionally important ecological stakes associated with the *possibility* of creating a new form of ownership of celestial bodies common to all mankind which is based not on the power to exclude all others from using the thing (the exclusive power) but on the need of taking into consideration the significance of all living and non-living components situated both on the planet Earth and outside it with which humans share a common interdependency (a common outer space). The trend of recognizing solely the importance of life, even where it is extraterrestrial (biocentrism), and of underestimating the “non-living” outer space’s own value (the commercial use of asteroids) is opposed by Tim Mulgan’s concept of the so-called “ananthropocentric purposivism”. This concept has been proposed by him as an alternative to both theism and atheism and it justifies the existence of moral values which are objective and absolute for the entire universe and which, however, do not have man as their center.

Although there is more and more talking about space tourism and space waste the legal regulation of celestial bodies remains quite unclear and wishful. The fundamentals of international **space**

law are contained in two international treaties more than 40 years old and it seems as if the present-day political world does not have the strength to achieve common agreement on the manner in which mankind will use the Outer Space. The first international act is the *Outer Space Treaty* of 27 January 1967 (“OST”), also known as the “cosmic Magna Charta”. It was signed by 89 countries, including the three Great Powers of that period: the USA, USSR, and the United Kingdom. Bulgaria is among the countries having signed OST. Beyond “retaining the jurisdiction and control” of the state related to the property of a specific object launched from the Earth into the space the outer space is proclaimed to be a space without sovereignty in which no country can impose the application of its national legislation. Nevertheless, as already mentioned, it is precisely such a “nationalization” of the legal regulation of Outer Space that is observed in contemporary space law.

The second international act is the *Moon Treaty* of 18 December 1979 (“MT”). It is signed by only 11 countries, among them France, Turkey, Romania, etc. Bulgaria has not signed MT. MT reproduces some of the main principles of OST, including the use of the Moon for peaceful purposes. MT proclaims the Moon and its natural resources a common heritage of mankind which is not subject to appropriation and any claim of sovereignty by any state. The right to property which is economically defined and which is not related to science is explicitly repudiated by MT. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization national organization or non-governmental entity or of any natural person. The actual conquest is invalidated both as a manner of establishing state sovereignty and as a manner of acquisition of property. Simultaneously, MT also stipulates an undertaking for the states to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. Thus, the right to property is not repudiated forever but only temporarily: until technologies make its economic capitalization possible. However, the most difficult question to solve is postponed: the question concerning the

mechanisms for distribution of the Moon resources. It is precisely along the fault lines of that question that the individual national legislations are currently attempting to impose their own solutions relying on the strength of their technological superiority and the fact that they will be the first to reach the respective outer space.

Given the international regulation so existing today some parallel *national legislations* are being developed as regards the access to and the ownership of celestial bodies. Among the most commented is the one of the USA which in 2015²⁴ allowed US companies and citizens to extract, own, transport, use and sell resources from the Moon and from the asteroids in the outer space. The purpose is clear: to give impetus to the future space industry by introducing various legal forms that make possible the practical realization of the economic aspirations of a number of private US companies to extract and trade in the resources of the Moon and the asteroids in the outer space. The assertion is that although the outer space *is common to all* it *is not a common good* and every state that has the corresponding technological capacity has the right to extract “lunar” resources, acquire the ownership of them and dispose of them as it deems fit.

By the development of technologies it can be expected that the “wild” Outer Space will soon become accessible enough to become the new “Wild West” which a number of trade companies engaging in extraction of raw materials will rush at. The existence not merely of a clear legal regulation but also of a philosophy to support it and, first and foremost, an ***ecological ethics***, is decisive for the manner in which mankind will cope with its *cosmic adulthood*. One of the theories about the development of intelligent life in the Universe is linked precisely to the readiness of a civilization to live outside its planet. Such readiness is associated with the ability of the said civilization to consciously and purposefully maintain the ecological balance on its planet (and not to over-exploit it) by utilizing and renewing to the maximum extent its natural resources. Until mankind attains that it will deservedly remain in “space quarantine”.

²⁴ For more details, see **Loder, R.** Asteroid mining: ecological jurisprudence beyond Earth. // Virginia Environmental Law Journal, 2018, No. 1, p. 276.

Among the questions where the space law can make use of the discussions in the environmental ethics and ecological law is the one related to the regulation of extraterrestrial life and, in particular, the claims of possession of *extraterrestrial microorganisms* that can become the first “living” discoveries of mankind in the Outer Space.²⁵ Undoubtedly, such microorganisms would be within the scope of property and will be an object of possession but along with the property-law regime it is possible to individualize another “exo-ecological” layer of regulation with respect to them. Thus, article 5 of MT stipulates an obligation for each state party to inform the public and the international scientific community of any indication of organic life in outer space. Alongside the earth’s protection against any possible pathogenic extraterrestrial matter there is also a reciprocal commitment on part of mankind. MT (article 7) requires that in exploring and using the Moon the states must take measures to prevent the possible disruptions of the existing balance of its environment. Abiding by such a “lunar sovereignty” requires that human intervention be limited to the minimum impact that is necessary for the peaceful exploration and use of the Moon and does not lead to a lasting change in the countenance of its territory.

The significance of extraterrestrial microorganisms could be placed within the framework of the well-established principle of protection of biological diversity that can be extended to the concept of *space diversity*. Although it is possible that the extraterrestrial microorganisms do not reproduce via DNA and therefore they do not constitute “genetic resource” within the meaning of the “terrestrial” environmental legislations they will be for sure a source to obtain important information necessary for the development of human science.

There is, however, yet another approach to justifying the protection of extraterrestrial microorganisms which is not related to their useful value for mankind. It comes to the concept of “*telompathy*” introduced by Charles Cockell when adducing arguments for his thesis that the microscopic extraterrestrial life must be preserved

²⁵ For the potential significance of microorganisms for the development of science, see **Milligan, T.** Nobody owns the Moon: the ethics of space exploitation, McFarland & Company, 2015, p. 118.

by taking into consideration its own worth and not the possibility of using it as a tool for satisfaction of the interests of mankind.²⁶ Teloempathy is a variety of the bioempathy humans feel about the living creatures within the planet Earth. In contrast to bioempathy teloempathy does not rely on the shared biological nature but on the realization that similarly to us the extraterrestrial microorganism exists in view of the attainment of a certain purpose. As the biological creatures (biota) aim to preserve and reproduce their lives so the extraterrestrial forms of microscopic life could be characterized by a certain tendency, an inclination towards the attainment of a certain outcome being an “end” (aim) of their existence of a kind. For Cockell the pursuit and attainment of a certain aim is the minimum life can be reduced to, including non-biological life, while preserving its own significance and the need that certain measures should be taken on part of mankind to protect it.

The conclusion made on the basis of the analysis made in Chapter 6 is that the ecological ethics turns out to be a bearer of moral values that should be viewed as key to the space future of mankind. The would-be contact with an advanced extraterrestrial life might teach us precisely about the *huge moral significance* of the obligation of rational beings to stably balance the **ecosystems** on their own planets in order to prevent their own self-destruction as a result of ecological crises generated by them. The mutual link among all living beings as well as between them and the resources of the non-living nature could turn out to be the most important part of the moral foundations of human legislation.

Part III Conclusion

The conclusion summarizes and further develops some theses having already been posed within the framework of the exposition. It attempts to systematize the two *lines* along which the specific regulations implement the coordination of human institutions with the dynamic ecosystemic processes. *One* of the lines is associated with placing property-law rights into an ecological context (introduction

²⁶ See **Cockell, C.** Duties to extraterrestrial microscopic organisms. // Journal of the British Interplanetary Society, 2005, No. 58, p. 369-370.

of restrictions on property), and the *other* requires the identification and affirmation of new models of possession and management of the natural resources (introduction of a culturally determined, hybrid, restricted common property, defensive, intergative, or a new kind of property). The first solution is quantitative and is associated with the extension of already existing administrative-law regimes of regulation of property. In this sense it is conservative and for that reason it faces certain skepticism in terms of its efficiency. The second solution is qualitative and is associated with the regulation of new types of property that take into consideration the role of non-human factors which should be somehow included into the very ownership of the natural resources. In this sense it is considerably more radical and for that reason it faces certain skepticism in terms of its necessity.

However, in *both cases* the aim is to create “socio-ecological systems” in which human economy is brought in conformity with the dynamics of the systems in the nature that is not dominated by man. It is thought that this could be attained by creating legal institutions of specialized design that take into consideration the autonomy of ecological processes and the long-term order they institute when maintaining the ecological balance. In both cases the right to property functions as a principal coordination mechanism on whose efficiency the successful attainment of the set environmental objectives depends.

The first approach to protecting the nature via property-law tools is associated with the introduction of different **restrictions to owning** things which are living biological organisms or are created as a result of geological processes not controlled by man. This approach includes:

a) imposing of *direct restrictions* of ownership with respect to things being part of the nature. Such are for example:

- the restrictions to the volume of ownership over animals manifested in the prohibition of inhuman treatment and cruelty (Animal Protection Act);

- requirements for conducting all experiments with test animals in a manner that reduces to the minimum causing of distress, unnecessary pain, suffering and lasting harm of animals (Ordinance No. 20/01 November 2012);

- prohibition of carrying out certain harmful acts with respect to the representatives of protected wild animal and plant species, including ones placed in a regime of protection and regulated use in the nature (Biological Diversity Act);

- prohibition of all activities leading to destruction, damaging or worsening of the physiological condition of trees declared to be protected (Biological Diversity Act);

- prohibition of the use of medicinal plants in manners and by means that lead to damaging their habitats, reduction of their resources, impeded recovery of their populations or reduction of their biological diversity (Medicinal Plants Act);

- prohibition of placing physical boundaries in forest territories (Forestry Act), prohibition on changing the natural course of waters (Waters Act), prohibition on restricting the movement of game (Hunting and Game Protection Act) and others.

b) creation of *regimes of management* of biological diversity and natural ecosystems as a common heritage of mankind. Such are for example:

- creation of competing types of property that exist in parallel with respect to the biological organisms: corporeal, intellectual and sovereign property (Biological Diversity Act);

- inclusion of representatives of future generations into the political process of decision making regarding the use of the natural resources;

- transposition of the principles of ecological law into the considerably broader and yet “wild” discourse of space ethics and protection of Outer Space as something common to all mankind.

The second approach to protecting nature via property-law tools attempts to go beyond the limitations of the conventional “old” property and propose *new formats of ownership* of natural data. It is associated with the ability of “seeing” property in new places: where human and non-human dependencies on the natural resources enter into a conflict with one another.²⁷ What is necessary is not equality of access and *management* of the natural resources but some form of weighed reciprocity. Thus, for instance, the protection

²⁷ See *Breckenridge, L.* Can fish own water?: envisioning nonhuman property in ecosystems. // *Journal of land use*, 2005, No. 2, p. 297.

of a certain level of water in different water sites is important not only for the humans in view of satisfying their needs of potable water and water for irrigation of the agricultural fields cultivated by them. It is also important for the survival of a number of other non-human living organisms, the fish being the main group among them.

The “*fundamental tension*” between the traditional objectives of private property and the requirement that the Earth be left in its natural condition leads to dynamicizing the contemporary theoretical concepts of property by strengthening its public, planning and ecosystemic aspects. The following changes to the characteristics of property are proposed: a) less focusing on the individual domination and abandonment of the traditional notion of property as an “island” or as a “moated castle”; b) more public solutions because the use of the land must be based on the ecosystemic links in it and not on looking upon it as a separate land property; c) increasing ecological planning because different types of land have different roles each of which has its own significance; and d) positive obligations for the owners to protect the ecosystemic services running on the respective land acting not only as an owner (to their own benefit) but also as a trustee (in view of preserving the ecosystem as a self-organizing whole)²⁸.

The conflict between the humans and the remaining biological species can be resolved by introducing legal formats for limitation of human domination. Thus, certain territories will have a legal status that excludes them as an object of human use. It is precisely in that context that the idea of ***defensive property*** that wards off the respective territory against any other claims for property made by other human beings or formations is presented. To a certain extent it can also be defined as a “*reversed*” *property* because it is one in favor of non-human living organisms for which certain natural resources are set aside. The inviolability of such resources does not directly benefit the humans but functions as a mechanism of protection for the remaining biological species and their place in the existing ecosystems. Defensive property is a negative of property of

²⁸ For more details see **Sax, J.** Property Rights and the Economy of Nature: Understanding *Lucas v. South Carolina Coastal Council*. – *Stanford Law Review*, 1993, No. 5, p. 1451.

a kind, which is recognized in favor of non-human biological species and even in favor of nature as a whole. It is precisely its prototype that has been used when constructing public property over protected areas such as reserves and maintained resources, national and nature parks, natural landmarks and protected areas.

However, introducing **public property** over the protected areas and nature parks *is not sufficient* because that type of property cannot embrace all significant natural components, a major part of which are “dispersed” and are in a diffused state within the boundaries of properties being privately owned. Usually, the protected areas are not big enough in terms of their range: especially in countries such as Bulgaria whose territory as a whole is relatively small, nor are they sufficiently isolated from the remaining natural processes on which mankind continues to exert substantial impact – water and air pollution, causation of climate changes, etc. Therefore, the preservation of the ecosystemic balance on the Earth calls for the application not only of one key legal tool, which is exclusive in terms of its effect, but the gradual unfolding of a system of numerous different regulations that should meet the complexity of the ecological problems and propose specific solutions within the individual types of situations of conflict between the economic interests of people and the ecological balance in the nature. Thus emerges the idea of the so-called “integrative” (“inclusive”) property in the unfolding of which one “ally”, surprising at first, appears: the cosmic time.

Proceeding from the experience in regulating the high seas and Antarctica the international community has the chance to propose a model of ownership in Outer Space based on the ideals of shared benefits and reciprocal obligations instead of the imperative of exclusivity. Not all conflicts, especially the ones of long-term ecological significance, can and should be resolved on the basis of the principle of exclusivity. If the “exclusive” property sets individuals apart by transforming them into independent masters of legal domains of independently exercised control, the ecological ethics can propose the model of an **integrative (“inclusive”) property** that *takes into consideration* the mutual connectedness of all natural components and the need of achieving a just allocation of the access to those resources both in spatial (“public” property) and in

temporal aspect (“trans-generational” property). Property is not only and solely a matter of satisfaction of personal preferences. There are some moral requirements as well that should also be recognized in the process of legal construction of property.

Thus, in the process of “re-invention” of property within a single ecology being *proprietary* in terms of its *set of tools* two specific poles are individualized: a) the pole of defensive (“warding-off”) property – the one that has retained the sting of exclusivity but is deprived of its usefulness manifested in the realization of a specific economic profit, and b) the pole of integrative (“inclusive”) property – the one that has repudiated its exclusivity in order to attain the maximum scope of its usefulness. If defensive property is super-property, one that invalidates any other claim for exercising human control (a property-law “Leviathan” of a kind that has settled down on a certain territory), integrative property is infra-property – one that provides for different dimensions for access of everyone to the integral essence of nature (a network of property-law “recognitions” of a kind regarding the mutual connectedness of all natural components). If defensive property has abandoned only the usefulness while retaining an intensive exclusivity, integrative property has abandoned the exclusivity while adopting a diffuse usefulness. Both the defensive and the integrative types of property presume a possibility of grading and modeling depending on the specifics of the object of ownership. This increases the ecological importance of property as a multi-specter regulatory resource which can ensure, on the basis of the flexibility of the proposed solutions and on pluralism in the possible approaches, an effective protection of nature.

III. PUBLICATION RELATED TO THE TOPIC OF THE DISSERTATION

1. **Monograph** on the topic of the dissertation

Stavru, St. Veshti v prirodno sastoyanie: sobstvenost i otgovornost za vredy v konteksta na chl. 50 ZZD [Things in Natural State: Property and Responsibility for Damages in the Context of article 50 of the Obligations and Contracts Act]. Sofia: Ciela, 2020, 318 pages.

2. **Studies and papers** on the topic of the dissertation

Stavru, St. Agrarniyat refluks: sotsialisticheskata sobstvenost i zemedelskite zemi v NRB [Agrarian reflux: socialist property and agricultural lands in the People's Republic of Bulgaria] IN: Koleva, A., V. Kalinov, St. Stavru (Eds.) Istorii i razkazvachi. Filosofiya, pravo, literatura. Spetsialno izdanie za yubileya na prof. Stiliyan Yotov [Stories and Story-tellers. Philosophy, Law, Literature. A special edition on the occasion of the jubilee of Prof. Stiliyan Yotov]. Sofia: Critique & Humanism Publishing House, 2020, pp. 191-208.

Stavru, St. Za virusite s lyubov (?) – biologichno raznoobrazie pred bioetikata (bulgarskiyat kontekst). [For viruses with love (?) – Biological Diversity Facing Bioethics (the Bulgarian Context)] // Eticheski izsledvaniya [Ethical Studies], 2020, issue 5, Vol. 1, pp. 3-26.

Stavru, St. Zashtita na nezshivata priroda: sayuzat mezhdu krasotata i ekologichnata etika [Protection of Non-Living Nature: the Union of Beauty and Ecological Ethics]// Eticheski izsledvaniya [Ethical Studies], 2020, issue 5, Vol. 2, pp. 84-112.

Stavru, St. Kam edna nevazmozhna mikrofizika na pravoto (na sobstvenost) [Towards an Impossible Microphysics of Law (Right to Property)] In: Nedev, D. Pravno deystvie na parvichnite sposobi na pridobivane na veshtni prava [Legal Effect of Primal Methods of Acquisition of Property-law Rights]. Sofia, 2017, pp. 17-48.

Stavru, St. Prava na prirodata – nasred ekologichnata eshatologiya i pravната teoriya? [Rights of Nature – Amidst Ecological Eschatology and Legal Theory?] // Sotsiologicheski problemi [Sociological Problems], 2016, No. 1-2, pp. 146-166.

Stavru, St. Pravo na sobstvenost i pravo na prirodopolzvanie – razgranichenie i saotnoshenie [Right to Property and Right to Use

the Nature – Distinction and Correlation] // Savremenno pravo [Contemporary Law], 2007, No. 2, pp. 43-59.

Stavru, St. Sandra, zivotnite i badeshteto na pravata [Sandra, Animals and the Future of Rights] // Eticheski izsledvaniya [Ethical Studies], 2017, No. 2, pp. 8-53.

Stavru, St. Solidarnostta i granitsite na pravata – vazmozni li sa prava na prirodata [Solidarity and the Boundaries of Rights] IN: Marinova, E., M. Mizov (eds.) Moral i etika na solidarnostta v savremennoto obshtestvo [Morality and Ethics of Solidarity in Contemporary Society]. Sofia, 2016, pp. 341-354.