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DIALOGUES BETWEEN GREEN CRIMINOLOGY, CRIMINAL LAW, AND ENVIRONMENTAL PROTECTION: EXPANDING THE OBJECT OF CRIMINOLOGY AND WHAT CRIMINAL LAW CAN OFFER

DIÁLOGOS ENTRE A CRIMINOLOGIA VERDE, O DIREITO PENAL E A PROTEÇÃO DO AMBIENTE: AMPLIAÇÃO DO OBJETO DA CRIMINOLOGIA E O QUE PODE O DIREITO PENAL OFERECER

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Abstract
The research undertaken in the following lines aims to analyze the influences that the valuation of the environment as entity with its own purpose has had on other scientific fields, especially in Criminal Law and Criminology. This is because the former categorizes the environment as a legal asset to be protected, while the latter expands its object of study to encompass this valuation of the environment, giving rise to what is

Resumo
A pesquisa empreendida nas linhas a seguir busca analisar as influências que a valoração do ambiente como entidade com finalidade própria provocou em outros campos científicos, sobretudo no Direito Penal e na criminologia, posto que o primeiro categoriza o ambiente como bem jurídico a ser protegido, ao passo que o segundo amplia seu objeto de estudo para abarcar essa valoração do ambiente, dando surgimento à denominada

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known as Green Criminology. In a second step, having established that the connection between these fields does not provide proper protection to the environment, given the peculiarities inherent to each of the sciences, we seek to introduce the perspective of social damage as an element capable of providing better environmental protection. This approach seeks to hold corporations as the primary entities responsible for environmental degradation, according to what Criminal Law can offer, especially in terms of environmental protection. It is concluded, therefore, that new perspectives on the concept of crime, perpetrators, and victims have been adopted, as these have long been rendered ineffective by various mechanisms of social regulation. A hypothetical-deductive method was used, based on documentary and bibliographical research.

Keywords: environment; corporations; green criminology; Criminal Law; social harm.

criminologia verde. Num segundo passo, constatado que a conexão entre as searas não entrega a proteção devida ao ambiente, haja vista peculiaridades ínsitas a cada uma das ciências, busca-se inserir a perspectiva do dano social como elemento capaz de abarcar uma melhor proteção do ambiente, imputando responsabilidade sobretudo às corporações, entidades que mais degradam o ambiente, por meio daquilo que o Direito Penal pode oferecer, mormente em matéria de tutela do ambiente. Conclui-se, portanto, pela adoção de novas perspectivas sobre a ideia de crime, autores e vítimas, há muito denunciados pelos mais diversos mecanismos de regulação social como ineficazes. Utilizou-se o método hipotético-dedutivo, com base em pesquisa documental e bibliográfica.

Palavras-chave: *ambiente; corporações; criminologia verde; Direito Penal; dano social.*

Introduction

Along with other fields of legal-political culture and as cultural constructs, Criminal Law and criminology seek to organize social coexistence based on the articulation of judgments on what ought to be. Consciously or unconsciously shared, they aim to maintain a cohesive conception of society.

As intellectual constructs of humankind, designed to restrain its latent animality, Criminal Law, like any imaginative creation, is subject to modulations throughout its existence. This occurs both due to local contexts that generate distinct approaches and because time and its passage influence or determine its reinterpretation, so that it may continue to exist as a regulatory system.

One of the hallmarks of socio-legal sciences as a whole is precisely their intrinsic ability to change through the influxes they internalize, surpassing the Kelsenian notion of a self-contained system. This became particularly clear following studies linked to post-positivism, which transcended the idea that Law is immune to the actions of time, localities, and especially other sciences that engage with it regarding criminal phenomena.

The potential for change is precisely what ensures its perpetuity, as Criminal Law can only continue if it is subject to external conditions. After all, there is no unity and stability except in language since life represents a continuous flow. In this regard, classical concepts inherent to the conception of Criminal Law needed to undergo modifications precisely so they could continue to regulate actions and omissions that harm legal goods. Otherwise, the criminal realm and other areas of Law would be doomed to no longer serve as regulatory systems for human conduct.

From this perspective, a new frontier opened up and significantly influenced a new outlook on Criminal Law and criminology in recent decades, due to the development of studies concerning environmental issues starting in the 1960s. New concepts emerged that placed Criminal Law and criminology once again in the role of regulating conduct that was not within their classical scope. This occurred because such new approach to nature did not previously constitute scientific data subject to legal analysis, not in the way it is currently understood.

In this context, concepts such as Future Generations, the Precautionary Principle, the Prevention Principle, Risk Society, and Intergenerational Solidarity, among many others, needed a new approach to the analysis of Criminal Law and criminology and their regulatory viability. Under this new framework, emerged green criminology, an academic field resulting from environmentalist influences, imbued with latent interdisciplinarity.

Thus, the aim of this work is to discuss the emergence of this new field of study based on the factors that provided its genesis, particularly concerning environmental influences that emerged in the 1960s. Since then, the Law as a whole—and especially Criminal Law—has been subjected to these influences to remain relevant in a time of rapid changes.

In this trajectory, the first topic shows the genealogy of the environment as a legal good to be protected, outlining its initial context until its affirmation as a fundamental right, 'greening' the legal system as a whole. Next, since the legal system is complex, the study shows that although the environment is a fundamental right, requiring protection and sometimes even promotion, Criminal Law, with its classical epistemology, adopts protective mandates. However, the novelty introduced causes dissonances in the application of its precepts, hindering its effectiveness and weakening its protective function, which is intrinsic to it.

Once it is recognized that the environmental phenomenon requires a review of other legal subfields, the third topic presents an analysis on the emergence of green criminology as an attempt to address the ineffectiveness of the criminal

justice system regarding environmental issues. This is because the system is oriented towards a paradigm that is showing signs of weakening in the face of postmodern issues, among them the safeguarding of the environment for the benefit of current and future generations, which constitutes the research problem.

Finally, with an interdisciplinary study, the aim is to establish the notion that green criminology's object of adapting Criminal Law to the new conditions presented by the environment, must include within its scope the concept of social damage as a defining element for criminal liability. Thus, it is possible to expand the scope of protection under Criminal Law and more effectively protect the environment from degradation, which is the hypothesis proposed in this research.

To this end, the study employed bibliographic and documentary research, employing hypothetical-deductive reasoning to evaluate whether the concept of crime can be modulated or replaced by social damage. The goal is to determine whether, at least in the environmental realm, this shift can enhance the utility of Criminal Law in protecting the environment for the benefit of life—both human and non-human—for current and future generations. Thus, in light of the method inaugurated by Karl Popper, which asserts that what is constructed can, and often is deconstructed over time and as the context shifts, it becomes understood that the notion of social damage is the most appropriate for environmental protection.

1 The value genesis of the balanced environment and its demand for protection

Just as Criminal Law is a human construct, the valuation of the balanced environment was also the work of human intellect, and its origin as a relevant value was in the mid-1960s. Human beings—animals with the peculiar characteristic of symbolizing reality, seeking to explain the phenomenic universe—use language to classify and organize the existing universe beyond language. This reflects Nietzsche's (1991) assertion that it is a psychological necessity of humans to order and classify what is not identical.

In this light, values can be understood as intellectual processes through which humans attribute meaning to certain aspects of the world. In these processes, humans are driven by reason, seeking to understand themselves and the universe. To achieve this, they erect a framework to evaluate a plurality of distinct situations and reduce them to a particular conception, made possible by the intersubjective nature of language.

Humans, through what is conventionally called culture, analyze phenomenic data around them—i.e., facts and the underlying historical context—attributing certain meanings to these data and deriving an evaluative conception from them, by making a value judgment on a particular object or phenomenon. Humans act through the use of linguistically shared signs, indicating that the formation of a belief or value requires certain conditions. Examples include the capacity of reason, the use of linguistic code systems, which are intersubjective, and society's acceptance of the proposed hypothesis, all culminating in an intersubjectively shared notion of something in the world.

From these initial notions regarding the construction of values, it is possible to infer that every concept or conception has a history, a narrative that may endure for a certain period and change over time. This is because, as Popper (1972) points out, the need for objectivity in science renders every scientific statement provisional. For this reason, what is constructed may, and often is, deconstructed over time and with changes in contexts.

Similarly, Kuhn (2007) revealed that science is not a hermetic system but is subject to the ebb and flow of time and context. It constitutes a structured and methodological system that delineates a way of thinking and solving problems, always against the backdrop of a historical context in which humans find themselves, but which undergoes changes over time.

In this perspective, the valuation of nature as an end in itself also carries a history that constitutes it, being an attempt to deconstruct another value forged in the 18th century and repeatedly reinforced since then, which is capitalism. Although human intervention in nature has occurred since humans became self-aware, the industrial revolution marked the environment as an instrument at humanity's disposal. This has influenced our modus operandi to the present day, although this notion has been called into question since the second half of the 20th century.

Around the 1960s, Rachel Carson published a seminal work on environmental degradation, inferring that the indiscriminate use of the pesticide dichloro-diphenyl-trichloroethane (DDT) caused the death of other animals, as well as the direct contamination of humans. Since then, the legal-political scenario has been grappling with the issues raised by Carson (2011) and later expanded upon by various other scientific perspectives, indicating that environmental degradation has reached a critical point.

Following Carson's initial provocation, the first United Nations conference on the environment was held in Stockholm in 1972. It aimed to address issues

related to environmental degradation, followed by the Rio+20 Conference[1], held in 1992 in Rio de Janeiro, Brazil.

During this period, scientists Ulrich Beck and Patrick Lagadec highlighted the risks that technological advancement posed to nature and humans themselves. Beck (2010) introduced the concept of the "risk society", and Lagadec (1981) coined the term "risk civilization". Both warned that society had reached, through technology, an immense potential for intervention in nature and even in human beings, but this had brought with it many uncertainties that had also grown exponentially. The consequences of decision-making could cause incalculable problems for humanity, compromising the well-being of present and future generations.

On the one hand, technological advancement has brought significant benefits to human coexistence, making it more convenient; on the other, such advancement has caused, and could cause numerous losses, sometimes immeasurable, to the ecosystem and human life itself. After all, technological advancement has not been limited to human intervention in nature but also in its biological condition, bringing never imagined uncertainties to the scientific field, which could reverberate locally and globally, affecting both the present and future (Beck, 2010).

In line with this thinking, Hans Jonas argues that in the face of advanced technology, which can cause unpredictable damage to the planet, a new ethics is required. This is because classical ethics, based on interpersonal relations, is no longer capable of addressing the consequences of new technologies. They center on humans and are linked to specific historical contexts, no longer corresponding to current reality. According to Jonas, "the promise of modern technology has turned into a threat, or has become indissolubly linked to it, and it goes beyond the acknowledgment of the physical threat" (Jonas, 2006, p. 21, free translation).

Faced with this scenario, environmental science, in its various fields, has developed principles such as the precautionary principle, the prevention principle, sustainable development, and intergenerational solidarity, among others. These principles aim to regulate human actions upon the environment to curb the advance of degradation, which threatens the planet's very survival as we know it.

In summary, this is the historical context or backdrop that has built the protection of a balanced environment to a value to be respected, in contrast to the capitalist notion that has persisted since the 18th century and intensified in the

1 This article does not seek to describe the various UN conferences dealing with the environment, given the physical limitations of the work, considering that several conferences have been and continue to be fundamental to the construction of environmental protection. In these terms, we have chosen to mention only the most emblematic in order to demonstrate how the value of nature as an entity with an end in itself was built up and the underlying concern of world society on the subject.

20th century[2]. This situation has led to climate change, species extinction, and various environmental disasters, all of which are attributed to humanity's capitalist ambitions. Criminal Law must confront this situation, particularly because many of these disasters inflict harm on both individual and collective legal goods. And it is also because nature itself, valued as an entity with an end in itself, has become a legally protected good under Criminal Law.

Given the numerous hermeneutically constructed meanings in recent decades, particularly in the environmental field, the branch of Law dealing with environmental issues has been elevated to the status of an autonomous field. Thus, Criminal Law finds itself in a scenario where certain concepts from this new field have prompted a reexamination of its conceptual foundations. The phenomenon of environmental degradation and its precepts go beyond the traditional notion of crime and its foundational elements, subjecting Criminal Law to a review of its content to adapt to this new criminal phenomenon.

Although it is necessary to modulate underlying elements of Criminal Law, returning to Kuhn (2007), a paradigm shift does not occur by replacing one system with another. It happens through a long process of rupture, in which the previous paradigm absorbs the notions of the new way of thinking and solving problems before ceasing to be applied.

This is the context in which Criminal Law finds itself, as concepts such as intent, applied to the conduct (action or omission) of legal entities causing environmental harm, as well as the institution of punishment, and the principle of subjective responsibility—the classic foundation of the notion of crime—require reevaluation. There is also the notion of abstract danger crimes, linked to the principles of precaution and prevention or the protection of future generations, along with other foundational aspects of Criminal Law, which need to be reconsidered to encompass this recent protection of a legal good.

Thus arises the concept of green criminology, which seeks to reframe criminal liability based on these new precepts. In particular, this occurs because there remains a gray area in which states and corporations, the greatest environmental degraders, remain largely immune to the coercive instruments legally provided (White & Heckenberg, 2014; South, 2017).

2 Notably, the historiography of the events that created the environment as a value to be protected was also influenced by other factors, such as the defense of animal rights. Previously, they were deprived of this prerogative, but they have already entered this moral universe. This and other premises will not be dealt with in this work due to the physical limitations of the research

2 Classical Criminal Law and the difficulty of embracing environmental protection

The new way of perceiving the environment, a perspective made possible by the notion of transforming nature into an entity with an end in itself, has caused certain impacts on the theory of Criminal Law. As a result, the classical notions of its principles have become debatable, as they were originally designed to protect legal interests different from what is now considered an invaluable asset to life itself, whether human or not (Costa, 2021).

These influences extend from the recognition of animals as subjects of rights, a perspective advocated by biocentric scholars who elevate non-human beings to the status of sentient entities. Thus, they are included within the moral universe (Singer, 2010; Regan, 2006), along with considerations regarding the environment as a whole. A similar perspective is proposed by the constitutions of Ecuador[3] and Bolivia[4], which advocate for *Pachamama*, considering the environment as a holder of its own rights. This shift has led jurists to debate the foundational elements of Criminal Law and its applicability to environmental issues.

Institutions such as strict liability, a fundamental principle in environmental Law regarding environmental damage, particularly when caused by legal entities, have created difficulties when considering their application in criminal matters. This is because they conflict with the central tenet of Criminal Law theory, which holds that criminal liability cannot be imposed objectively.

Punishing individuals who make decisions within corporations under strict liability would undermine basic principles of Criminal Law, as it would subject them to responsibility without conscious awareness. Decisions supported by Environmental Impact Assessments (EIA) often do not provide executives with full knowledge of the consequences of certain actions. Additionally, the State's role in approving (licensing) projects often lends legitimacy to the EIA, legitimizing the corporate decision-making process through its executives.

Thus, it becomes challenging to reconcile the principles of precaution and prevention with subsequent environmental damage. Licensing decisions made at

3 Artículo 10: Las personas, comunidades, pueblos, nacionalidades y colectivosson titulares y gozarán de los derechos garantizado sem la Constitución y em los instrumentos internacionales. La naturaleza será sujeto de aquellos derechos que Le reconozca la Constitución (Ecuador, 2008).

4 Artículo 8. I. El Estado asume y promueve como principios ético-morales de la sociedad plural: ama qhilla, ama llulla, ama suwa (no seas flojo, no seas mentiroso ni seas ladrón), suma qamaña (vivir bien), ñandereko (vida armoniosa), teko kavi (vida buena), ivi maraei (tierra sin mal) y qhapaj ñan (camino o vida noble) (Bolivia, 2009).

the time may have been deemed legitimate, but unforeseen damage occurs later.

Imposing civil, administrative, and criminal liability on managers of large enterprises seems logically inconsistent with the foundations of classical theories of punitive Law, especially in the criminal sphere (Byam, 1982; Gans, 2000).

As Ribeiro and Calhau (2022) warn, punishing corporate directors and executives for actions linked to abstract entities like corporations becomes precarious in democratic states governed by the rule of Law. The Criminal Law's attempt to address new complexities and risks to environmental legal interests has not been accompanied by a corresponding adjustment in criminal norms, at least not at the same pace. This creates conflicts between the traditional elements required to constitute a criminal offense and the protection of these legal interests, which would distort the principle of minimum intervention if natural persons were held strictly liable.

According to these authors, there is difficulty in defining the active subjects of offenses of this nature due to confusion between the legal entity and the natural persons comprising the corporation. Possessing its own legal personality, the corporation acts with its own will, but in reality, individuals who make decisions regarding environmental exploitation determine its conduct. This creates challenges in attributing criminal liability, as others who make it difficult to distinguish the material aspects of each action and the degree of culpability of each participant, whether as a principal or an accomplice, drive an autonomous entity.

The individualization of each agent's conduct is crucial during criminal proceedings to determine the degree of guilt of those involved in the offense. Legal doctrine and case Law have difficulty assigning responsibility for authorship and participation precisely because the extent of each person's contribution is unclear.

These uncertainties are reflected in the frequent and rapid shifts in court rulings regarding facts that, in a given moment and context, may not be considered criminal. However, later they may be deemed so, either due to changes in court composition or to evolving legal interpretations influencing jurisprudence, even if the same body of judges remains (Ribeiro; Calhau, 2022).

As seen, attributing criminal liability in environmental matters faces interpretive and practical challenges, particularly in applying crucial principles of Criminal Law. This difficulty stems from the challenge of assigning criminal responsibility to natural persons for actions taken by legal entities.

The radiating effect of the principles of prevention and precaution would require a reassessment of the principle of minimum intervention, *ultima ratio*, and a reanalysis of the principle of subjective responsibility that underpins modern

Criminal Law theory. Additionally, it would necessitate a broader interpretation of abstract danger crimes. The combination of these normative elements leads to uncertainty and, ultimately, paralysis in environmental intervention, creating a society caught between chaos and the cultivation of fear.

3 The expansion of the object of critical criminology and the greening of the Constitution and criminology

The challenges faced by classical Criminal Law theory regarding the peculiarity of the constitutional legal interest to be protected—the environment elevated to the status of an object-subject of fundamental rights—opened up new frontiers for Criminal Law. This topic aims to explore a potential reconciliation between what Criminal Law offer and environmental protection, especially considering the escalating environmental degradation.

To maintain its primary characteristic of protecting society's most important assets—when other regulatory branches can no longer effectively prevent environmental degradation—Criminal Law must adapt to how this legal good is continuously violated. This necessitates the implementation of criminal policies focused on protecting diffuse goods. In this context, the concept of *green criminology* emerges, recognizing that environmental degradation is not only caused by humans but primarily by large corporations, which, due to their abstract nature and the difficulty in attributing naturalistic consciousness and will to them, often escape the criminal consequences of their actions (Potter, 2010; White; Heckenberg, 2014). Therefore, it concerns damage and criminal offenses without clear authorship.

As Ferrajoli (2014) points out, as criminology is traditionally focused on the individual offender, it was incapable of addressing crimes committed by legal entities. As a result, there were new environmental offenses left adrift, particularly because the victim, nature in this case, was often sidelined in discussions, when its autonomy, independent of human involvement, should have been recognized.

Thus, fields of study that had been separated from criminology had to be covered by it, to the point of talking about a new branch of criminology, known as green criminology. This environmental approach absorbed by criminology had its origins in the studies of Michael Lynch who, in the 1990s, gave greater visibility to environmental issues and the crimes related to them. He placed greater emphasis on the environmental issue from the perspective of criminals (individuals, States, and corporations), victims and the consequences of the relationship between penal control and capitalism (Lynch, 1990).

Recognizing a gap in the treatment of environmental issues within crime studies, criminology not only found itself debating environmental damage and its consequences to humans and non-human beings but also contributed to the greening of constitutionalism[5].

It was only since Beirne and South (2013) that the scope of green criminology began to expand. Crimes committed by governments, transnational corporations, and ordinary people, which endangered the planet's existence, were not matched by corresponding responsibilities, which led the spiral of degradation to continue.

The critical criminology had already analyzed how to regulate and contain the damage caused by crimes, especially in terms of preventing corporate offenses. White-collar crimes and other financial offenses committed by large corporations, for example, remained in a gray area where accountability was often symbolic, with little practical effect. However, social—and equally environmental—damages caused by these corporate acts were and remain far more harmful than those caused by individuals (Ward, 2004; Liñares; Fouquet, 2020).

This perspective laid the groundwork for reevaluating the objects of criminology, calling for the inclusion of new perspectives in those studies. Thus, the ineffectiveness of Criminal Law's regulatory power in this area became apparent, mainly due to the difficulty in assigning criminal liability because of three key elements: the limited scope of the concept of crime, the notion of subjective responsibility in Criminal Law, and the challenge of establishing authorship for such acts. These points reinforced the old notion of Criminal Law's inefficacy in regulating, even subsidiarily, human conduct as *ultima ratio*.

In this context, alternative perspectives in criminology emerged, going beyond the traditional notion of crime to examine actions causing environmental damage and, consequently, social damage. However, even when such actions were covered and protected by Criminal Law, they remained subject to the uncertainty of assigning responsibility.

From this viewpoint, the reflection on criminology's object needed to be broadened. Green criminology prompted this expansion by replacing or complementing the notion of crime with the concept of social damage.

By expanding criminology's object of study and including the notion of social

5 In fact, the greening of life, which was already natural, even if imperceptible or incomprehensible, has become an unavoidable topic for evaluation in all areas of law. According to Sampaio (2016, p. 84, free translation), constitutionalism has itself been led to a greening and has come to be called "'green,' 'ecological,' and 'environmental constitutionalism'; or, in its universalizing expression, as 'global environmental constitutionalism.'"

damage, it became possible to better define the relationship between what is to be protected—the environment as a legal good—and what classical legal categories aim to regulate. The classical concepts of Criminal Law were modulated in their central characteristics without necessarily distorting or nullifying them, but rather allowing to achieve better protective outcomes for the newest fundamental legal good to be safeguarded for current and future generations

4 The notion of social damage as an object of green criminology and its impact on environmental matters

Since the principles of Criminal Law are oriented towards a notion of crime with its own characteristics in terms of use or application—presenting a peculiar grammar tied to a concept of offense with specific features—their mutation as a regulatory system is not necessarily unfeasible. This is because, as previously explained, the notion of adaptation in light of time and context is a reality with which Law, particularly Criminal Law, must engage; otherwise, it is destined to fade away.

Thus, Criminal Law and criminology must align with their historical time, adapting to the new currents of environmental protection. Since both Criminal Law and criminology are bound to classical notions of offense and their forms of application to the facts they regulate, they need to reformulate their central concepts. This is necessary both to reinterpret classical notions inherent to their epistemological foundations and to embrace new concepts. However, this does not entail abolishing one or completely reformulating the other, but rather adopting new perspectives while leveraging established criteria.

Critical criminology had already identified this difficulty with Sutherland's (2015) studies on white-collar crime. Consequently, it bequeathed to green criminology the perspective that the concept of social damage should be included within the scope of the notion of crime due to the epistemological and practical deficits of traditional criminology.

Given the similar patterns between white-collar and environmental crimes, it was observed that there is also a relative similarity regarding immunity in the criminalization process. According to Ruggiero and South (2010), both types of crimes encounter the same challenges of attribution, resulting in similar inefficacy in protecting the respective legal interests. For this reason, from the perspective of green criminology, it is necessary to expand the object of study to include socio-environmental damage as a basis for criminal liability.

This task is not simple, given that the conflict between capitalism and sustainable development—premises not necessarily opposed but which in practice have proven antagonistic—continues to persist over time. Milanovic (2020) asserts that capitalism lacks external mechanisms or systems that can impose limits on it, as those who attempted to do so eventually failed.

States and large corporations may depend on this economic system because they mistakenly associate the concept of development exclusively with economic growth. This contradicts the perspective outlined by Amartya Sen, who argues that growth is not synonymous with development (Sen, 1999; Sen; Kliksberg, 2010). Something must be done to ensure that the two premises do not exclude each other but coexist and move in the same direction.

From this perspective, the notion of social damage emerged as a category that could reconcile the need to encompass environmental protection within criminology and, at the same time, enable criminal charges to be brought against states and corporations that degrade the environment.

Criminal Law is, as a rule, selective and discriminatory, oriented to attributing liability to specific individuals, often defending the interests of social groups. This paradigm has shown signs, however, that it cannot respond to the current demands for legal protection, not only for the environment but also for other areas triggered by modernity.

The notion of crime, the central concept around which the normative system of Criminal Law revolves, is still oriented towards a modern ethical practice, in which moral attribution occurs between individuals and between individuals and property. However, Jonas (2006), who argued for the need for a new postmodern ethics that broadens morality and include reflections on what humans—whether at the state or corporate level—can unleash on the universal context and the planet's inhabitants, already articulated this view.

The harmful effects of crimes committed by states and corporations are not limited to individually identifiable victims but extend to a multiplicity of affected parties, constituting diffuse harms. Alternatively, it may result in "societal damage", whose cumulative or extensive effects can impact the present and project into the future, defining an intersubjective victim (Sharkey, 2003; Kelly, 2004).

It is evident that criminal regulatory systems are primarily concerned with the direct consequences of crimes outlined in their outdated legislation, leaving actions that have far greater impacts on the environment and society uncovered. This can be seen in the recent case involving the mining company Brasken S.A. The company's salt mining activity caused an environmental disaster in Maceió,

state of Alagoas, Brazil. This event was not seen as a crime but rather as an "unforeseen" collateral environmental and social damage, forcing over 60,000 people to relocate and creating a mass of environmental refugees[6].

Similar events have led critical criminology to focus on the near-penal immunity of perpetrators such as Brasken S.A. as well as on the victims of such corporate actions. Although the harm in these cases is much more severe, resistance remains against the notion of criminal liability for corporations, as they are abstract entities but possess legal personality and their own "will".

It is clear that as long as environmental damage continues under current criminal policy, the difficulty of assigning responsibility to collective entities will persist. On the other hand, if the notion of social damage as a central element of Criminal Law were in place, as argued by Hillyard and Tombs (2004), it would provide more adequate protection compared to preconceived legal systems, which have proven inefficient.

In this regard, green criminology envisions more effective environmental protection by redefining the concept of crime and expanding studies on offenders and victims. This stands in contrast to the criminal dogma tied to a selective proposition of crime, based on notions of property damage and the perspective that crime is limited to individual human intent, disregarding offenses committed through power relations, such as by corporations and states.

The criticisms related to the selectivity of the criminal system, concerning structures of power, class, race, gender, and other variables, still hold theoretical validity, especially concerning Environmental Law. This law, drawn from various interdisciplinary foundations, and which Morin (2010, 2015) calls complexity, remains hostage to a criminal system that fails to provide comprehensive protection for what should be its core—the environment.

In the field of environmental Criminal Law, there is a converging crisis of various branches addressing the same issue, each from a different perspective. The difficulties of protecting the environment and future generations persist in Criminal Law, Environmental Law, and criminology. Each of these disciplines continues to grapple with understanding the environmental phenomenon and its influence on various systems.

However, it is not about abandoning the concepts that each of these areas holds as foundational to their epistemologies. It is rather aligning their elements

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6 The Brasken S.A. case and its nuances is not analyzed in this study, but is only cited to confirm the hypothesis that legal entities (corporations) and states are not held accountable in the same way as natural persons when their conduct violates the Criminal Law. This can also be verified regarding the company VALE S.A. and what has been held accountable so far.

to support a shared understanding that, until now, has proven essential to the planet's continued existence. Periodically, the ineffectiveness of these three scientific spectra of environmental protection is noted.

Interpreting the crisis faced by critical criminology, from which green criminology derives, Hil and Robertson (2003) believe that shifting the idea of crime to social damage could provide better interpretative tools for understanding the modern world and its changes over the past decades. This facilitates greater engagement with human rights perspectives beyond Penal Law and criminological culture, which have been used so far as mechanisms of responsibility attribution.

Within green criminology, Budó (2016) asserts that the category of social damage could help seek alternatives to pre-established systems that have not been providing adequate protection for the environment. It broadens the interpretation of categories such as victims, offenders, and harmful consequences to society. Until now, these stances been overlooked, especially in Brazil, a country dependent on the market and which finds in this issue a justification to continue degrading the environment.

The fundamental nature of rights of the protected good and the reconsideration of criminal offense as social damage influence the volitional element and the capacity to impute responsibility to moral entities. The fact that corporations are legally abstract entities does not prevent them from issuing orders from streams of commands contrary to the Law (Ambos, 2009). Even admitting the application of the theory of the domain of the fact modulated as the theory of the "domain of the fact by competence" or the "normative domain" of the organization (Roxin, 2000; Feijoo Sanchez, 2012), without this implying the extension of responsibility to the duty of result, in complex structures, which objectifies it (Jakobs, 1991).

Cognition and will are manifested through a set of corporate acts, decisions, and procedures that contribute to the violation of the good, whether through recklessness, incompetence, or negligence, or by direct or indirect intent. This issue lies in evidence, not necessarily in a legal impossibility, which reflects the economic colonization over the legal sphere.

Conclusions

The last few decades have cemented the valuation of an ecologically balanced environment, unveiling the predatory relationship between humans and nature. This became known in the academic sphere as anthropocentrism, an era of human intervention in nature. In contrast, a biocentric/ecocentric perspective

has recently emerged on the historical horizon, advocating for a new outlook on human-nature interaction.

Because of the anthropocentric worldview, which persisted for millennia, an environmental crisis emerged, prompting various scientific fields to analyze human behavior. Each of these fields asserted that this modus vivendi, if left unchanged, would compromise the planet's environmental conditions, casting doubts on its very existence. However, despite the facts and theories supporting this perspective, the escalation of environmental degradation seems limitless, as humans always find a way to satisfy their desires, while nature cries for help.

In this conflict, Criminal Law is once again called upon, as it constitutes the most drastic branch of the legal system to intervene when the imperative of environmental protection is violated. However, Criminal Law itself, rooted in conceptions focused on criminalizing and imputing conduct unrelated to the environment, has been questioned regarding its ability to protect the environment. This concern also applies to present and future generations, especially since Criminal Law's epistemology is oriented toward the notion of crimes involving individual assets, natural persons, and a particular notion of time and space distinct from that of the environment.

Since states and corporations are those who primarily degrade the environment, critical criminology had to examine itself and recognize that, as with white-collar crimes, legal entities are the ones causing the most harm to society without being held sufficiently accountable. This perpetuated the outdated notion that Criminal Law is selective and discriminatory, a perspective that was also applied to environmental issues. After all, the difficulties in holding environmental offenders accountable were similar, leading some scholars to consider Criminal Law ineffective for protecting this legal good.

The concept of green criminology emerged as a self-critical instance of criminology itself, warning that if Criminal Law and criminology did not modulate their inherent premises, they would fall short in terms of their effectiveness to protect the environment. The notion of social damage—in this case, socio-environmental damage—was established as a mechanism to encompass what Criminal Law has to offer in terms of imputing responsibility.

Thus, in line with the constitutional and infraconstitutional principles of Environmental Law, the goal is to propose better conditions for protecting a balanced environment by holding accountable those who degrade it—states and corporations (both national and international)—with appropriate criminal consequences. This implies rewriting the normative precepts of Criminal Law to utilize

what can still be discursively applied. This does not mean eliminating its existence but rather revising its role and function, detaching it from outdated legal notions of crimes and legal goods to be protected.

In these terms, unless the existing legal categories, inherited from modernity, are reconsidered, environmental degradation will continue in the postmodern era. Among these worldviews, there is a certain difficulty in finding complementarity, although this issue is not insurmountable, as it only needs detachment from certain interpretations of the legal system, as it is still understood. It is necessary to incorporate new views on crime, perpetrators, and victims, which were long denounced as ineffective by various mechanisms of social regulation.

Currently, these criticisms include the ability of Criminal Law to protect the environment. However, at the same time, other legal subsystems are also unable to achieve such protection, indicating that the *ultima ratio* of Criminal Law remains a necessary point in humanity's trajectory, from which it cannot break free. It is possible to assert that the future of humanity and the planet, whatever they may be, necessarily involves the realms of criminology and Criminal Law.

References

AMBOS, K. Command responsibility and Organisationsherrschaft: ways of attributing international crimes to the 'most responsible'. *In:* NOLLKAEMPER, A.; VAN DER WILT, H. (ed.). *System criminality in International Law.* New York; Cambridge: Cambridge University Press, 2009. p. 127-157.

BECK, U. *Sociedade de risco:* rumo a uma outra modernidade. Tradução Sebastião Nascimento. São Paulo: Editora 34, 2010.

BEIRNE, P.; SOUTH, N. *Issues in green criminology:* confronting harms against environments, humanity and other animals. New York: Routledge, 2013.

BOLIVIA. *Constituición Política del Estado*. Sucre: Asamblea Constituyente, 2009. Available from: https://www.minedu.gob.bo/files/documentos-normativos/leyes/nueva_constitucion_politica_del_estado.pdf. Access on: Jan. 15, 2024.

BYAM, J. T. The economic inefficiency of corporate criminal liability. *The Journal of Criminal Law and Criminology (1973-),* v. 73, n. 2, p. 582-603, 1982.

BUDÓ, M. N. Danos silenciados: a banalidade do mal no discurso científico sobre o amianto. *Revista Brasileira de Direito*, Passo Fundo, v. 12, n. 1, p. 127-140, jan./jun. 2016. Available from: https://seer.atitus.edu.br/index.php/revistadedireito/article/view/1281/843. Access on: Jan. 15, 2024.

CARSON, R. *Primavera silenciosa.* São Paulo: Gaia, 2011.

COSTA, B. S. *Meio ambiente como direito à vida:* Brasil, Portugal e Espanha. 4. ed. Belo Horizonte: Sete Autores, 2021.

ECUADOR. *Constitución de la República del Ecuador*. Quito: Presidencia de la República del Ecuador, 2008. Available from: https://siteal.iiep.unesco.org/sites/default/files/sit_accion_files/constitucion_de_la_republica_del_ecuador.pdf. Access on: Jan. 15, 2024.

FEIJOO SANCHEZ, B. Autoria e participação em organizações empresariais complexas. *Revista Liberdades*, São Paulo, n. 9, p. 26-57, 2012.

FERRAJOLI, L. Criminología, crímines globales y derecho penal: el debate epistemológico em la criminología contemporánea. *In:* BEIRAS, I. R. *Delitos de los estados, de los mercados y daño social:* debates em criminologia crítica y sociologia jurídico-penal. Barcelona: Anthropos, 2014. p. 82-8.

GANS, J. S. Incentive contracts, optimal penalties and enforcement. *Optimal Penalties and Enforcement,* 2000. Available from: https://ssrn.com/abstract=227832. Access on: Feb. 21, 2024.

HIL, R.; ROBERTSON, R. What sort of future for critical criminology? *Crime, Law and Social Change*, n. 39, p. 91-115, 2003.

HILLYARD, P.; TOMBS, S. Beyond criminology? *In:* HILLYARD, P. *et al.* (ed.). *Beyond criminology:* taking harm seriously. London: Pluto Press, 2004. p. 11-17.

JAKOBS, G. *Strafrecht, Allgemeiner Teil: die Grundlagen und die Zurechnungslehre. Lehrbuch.* 2., neubearb. und erw. Aufl.Berlin; New York: de Gruyter, 1991.

JONAS, H. *O princípio da responsabilidade:* ensaio de uma ética para a civilização tecnológica. Tradução Marijane Lisboa e Luiz Barros Montes. Rio de Janeiro: Contraponto, 2006.

KELLY, M. B. Punitive damages compensate society. *San Diego Law Review,* v. 41, p. 1429-1442, 2004.

KHUN, S. T. *A estrutura das revoluções científicas.* Tradução Beatriz Vianna Boeira e Nelson Boeira. São Paulo: Perspectiva, 2007.

LAGADEC, P. *La civilisation du risque:* catastrophes tecnologiques et responsabilité sociale. Paris: Seuil, 1981.

LIÑARES, D. C.; FOUQUET, D. B. Delincuencia socioeconómica y daño social: perspectivas político-criminales para un contexto poscrisis. *Estudios Penales y Criminológicos*, v. 40, p. 45-111, 2020.

LYNCH, M. *The greening of criminology:* a perspective on the 1990s. Farnham: Ashgate Aldershot, 1990.

MILANOVIC, B. *Capitalismo sem rivais:* o futuro do sistema que domina o mundo. Tradução Bernardo Ajzemberg. São Paulo: Todavia, 2020.

MORIN, E. *Introdução ao pensamento complexo.* Tradução Eliane Lisboa. 5. ed. Porto Alegre: Sulina, 2015.

MORIN, E. *Ciência com consciência.* 14. ed. Rio de Janeiro: Bertrand, 2010.

NIETZSCHE, F. W. *Obras incompletas:* seleção de textos de Gerard Lebrun. Tradução e notas Rubens Rodrigues Torres Filho. 5. ed. São Paulo: Nova Cultural, 1991.

POPPER, K. R. *A lógica da pesquisa científica.* 5. ed. Tradução Leônidas Hegenberg e Octanny Silveira da Mota. São Paulo, Cultrix, 1972.

POTTER, G. What is green criminology. *Sociology Review*, v. 20, n. 2, p. 8-12, 2010.

REGAN, T. *Jaulas vazias:* encarando o desafio dos direitos dos animais. Porto Alegre: Lugano, 2006.

RIBEIRO, L.G. G.; CALHAU, L. B. Programas de integridade, corporações e o Direito Penal Econômico. *In:* FLORES, A.; RIBEIRO, L. G. G.; JESUS, T. A. C. (coord.). *V Encontro Virtual do CONPEDI – Direito Penal, Processo Penal e Constituição I*. Florianópolis: CONPEDI, 2022. Available from: http://site.conpedi.org.br/publicacoes/465g8u3r/zf0ru85t/6Ec2ZPAHY6DunuQN.pdf. Access on: Jan. 15, 2024.

ROXIN, C. *Autoría y dominio del hecho en Derecho penal*. Tradução Joaquín Cuello Contreras e José Luis Serrano González de Murillo. Madrid: Marcial Pons, 2000.

RUGGIERO, V.; SOUTH, N. Critical criminology and crimes against the environment. *Critical Criminology – an International Journal,* v. 18, n. 4, p. 245-250, set. 2010. Available from: https://link.springer.com/article/10.1007/s10612-010-9121-9. Access on: Sept. 17, 2024.

SAMPAIO, J. A. L. Os ciclos do constitucionalismo ecológico. *Revista Jurídica da FA7*, Fortaleza, v. 13, n. 2, p. 83-101, jul./dez. 2016. Available from: https://periodicos.uni7.edu.br/index.php/revista-juridica/article/view/65/54. Access on: Jan. 3, 2024.

SEN, A. *Sobre ética e economia*. Tradução Laura Teixeira Mota. São Paulo: Companhia das Letras, 1999.

SEN, A.; KLIKSBERG, B. *As pessoas em primeiro lugar*: a ética do desenvolvimento e os problemas do mundo globalizado. Tradução Bernardo Ajzemberg e Carlos Eduardo Lins da Silva. São Paulo: Companhia das Letras, 2010.

SHARKEY, C. M. Punitive damages as societal damages. *Yale Law Journal*, v. 113, p. 347-453, 2003.

SINGER, P. *Libertação animal*. Tradução Marly Winckler e Marcelo B. Cipolla. São Paulo: Martins Fontes, 2010.

SOUTH, N. *Green criminology.* London: Routledge, 2017.

SUTHERLAND, E. H. *Crime de colarinho branco:* versão sem cortes. Tradução Clécio Lemos. Rio de Janeiro: Revan, 2015.

WARD, T. State harms. *In:* HILLYARD, P. *et al*. (ed.). *Beyond criminology:* taking harm seriously. London: Pluto Press, 2004. p. 84-100.

WHITE, R.; HECKENBERG, D. *Green criminology:* an introduction to the study of environmental harm. London: Routledge, 2014.

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