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The Environment as a Factor in Small Wars*

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ABSTRACT

This research paper analyzes the relationship between small wars, insurgency, and the natural environment. Existing literature and data are organized into four behavioral patterns: the *resource-based wars* accounts for the fight over natural resources; the *warfare ecology* paradigm refers to non-premeditated damage in preparation for as well as during and after conflicts; the *environment as a target* discusses intended attacks on the ecosystem; and the *insurgency–climate intersection* pattern denotes a deviation in climate change that increases the frequency of intergroup violence. The main premise is that small wars emerge when the ecosystem becomes a political asset.

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From a sociological perspective, the essential question surrounds what level of influence the natural environment has on small war conflicts as a political phenomenon. As a secondary aspect, insurgent social configurations of belligerent organizations are analyzed. To that point, the value added in this work is the identification and explanation of four main behavioral patterns that intersect war and the environment. Although war has been one of the most common social phenomena in human history, it is paradoxically an underexplored sub-discipline.¹ By revisiting the quite unpopular topic of conflict studies, Georg Simmel² argues that conflict is not an anomaly that needs to be fixed but a constituent element of social interaction. Currently, societies function with strife and associate simultaneously as opposite and as combined forces. In that regard, the sociological study of war and armed groups needs to be promoted as inherent to the morphology of societies.

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From a methodological stance, a war is a social outcome with dimensions that commonly occur beyond direct observation. Its complexity and temporal extent make it very difficult to work with directly, so it is mostly analyzed through secondary sources.³ Most available works are reports produced by third parties; thus, the sociology of war method is not about trying to follow every event in detail but about establishing broad guidelines so that the methodological filter is the criterion of reasonableness. Although each event is unique, social patterns are recognizable.⁴ These parameters are therefore applied in this research.

The main premise is that conflicts do not always emerge when demographic growth meets insufficient natural resources. It is argued that social groups interact with the environment not only to promote their own economic survival but also to exercise their political dominance over others. For this reason, the topic of current manifestations of war should be considered. Hence, the social significance of mutual dependence between society and the natural environment needs to acknowledge power. From a Weberian perspective, power is the prevalence of a person or group's interest over others; in other words, the probability that an individual subject has to exercise his own will within a social relationship.⁵

This qualitative study uses theoretical propositions as an analytic strategy, with the aim of contributing to the development of sociological knowledge in the field. Conflicts that arise due to industrialization processes are not emphasized; instead, those that emerge between social groups where systemic violence is key are considered. Initially, while old wars were linked to the state's monopoly of taxation and violence and the territorial defense against other states, new wars blurred the dividing line between legitimate violence and criminality. In this case, economic gain is the main motivation.⁶ In new wars, private armies play a leading role in the exploitation of natural resources and illegal trade as sources of self-financing. Instead of opposing national armies, a system of state and non-state actors that includes belligerents and organized crime networks perpetrate all sorts of violence against civilians.

However, the term 'new wars' has been criticized since it is not clear that violence against civilian population is greater than before and the interconnectivity of state and non-state actors, war and peace, and between politics and economics is a new phenomenon or a constant in human history.⁷ In that sense, the importance of the ongoing morphology of violence is not the idea of 'old or new' but the concept of 'small'. Thus, *small wars* are marked by the aforementioned features and as a synonym of 'little' wars as they take place within the boundaries of a certain geopolitical area involving a limited number of belligerents and elementary tactics with long-term consequences.⁸ In addition, in this case *insurgency* is considered as the large spectrum of non-state violent organizations such as militias, warlords, guerrillas, paramilitaries, and illicit transnational networks localized in small war environments.⁹

In small war scenarios, four patterns of the environmental–war interconnection related to opposite mechanisms can be identified. In the first case, the ecosystem is viewed as the cause of certain behavioral configurations in *resource-based wars*, *warfare ecology* practices, and the *environment as a target of war*. The *insurgency–climate intersection* is the reverse process; it focuses on the effect of weather-related events on human behavior in terms of the increase in intergroup violence probability.

The environment as a factor is examined using as main proxies *cause*, *intensity*, and *public exposure*. Not every conflict related to the dominion over natural resources is violent. In other words, the cause should match a certain intensity, as some conflicts have not escalated to wars and remain as social conflicts. The last proxy is also relevant in the sense that many small wars in which the environment is a crucial factor have little or no exposure in the mass media. These cases are shaded from global public opinion and remain in the sphere of local communities.

This work is divided into four sections. First, some leading concepts that are relevant to the environmental–societal nexus as well as a definition of small wars and insurgency are explored. In the main section, the war–environment relationship is analyzed. Case selection aligned with the aforementioned proxies. Although several empirical examples can be identified around the world, the relationship between weather-related events and violence is particularly linked to sub-Saharan Africa.¹⁰ For that reason, to demonstrate the globality of these sociological ideal types the two selected cases are Colombia and Afghanistan. Despite their many political differences both have been exposed to the four behavioral patterns explained in this research paper. In the final remarks, four ethical concerns that remain as unanswered questions in the intersection between environment and small wars are emphasized.

The environmental–war connection

The oil crisis in the 1970s shaped *environmental sociology* as a specific subdiscipline with a focus on the study on green movements, energy issues, risks of catastrophes, public attitudes toward the environment, and the quality of the environment as a social problem.¹¹ The mainstream of the subdiscipline introduced the need to move from an anthropocentric to a biocentric paradigm,¹² defining this discipline as the study of societal–environmental interactions or the relationship between the environment and society.¹³ In that line, the *new ecological paradigm* argues that the natural environment is key to human development because it provides not only the space where humans conduct their actions but also resources for living and acts as a sink for waste products of industrial activities; however, the burden that this creates on the ecosystem is increasingly becoming unsustainable.¹⁴

Current approaches also have a biocentric view of the ecosystem, and stress the limits of economic growth and the unequal environmental burden of economic development, arguing that the contemporary global system depletes natural resources at an unmanageable pace¹⁵; so that it is alleged that global economic growth and industrialization are severely draining non-renewable resources, accentuating ecosystem processes, and generating unprecedented amounts of waste.¹⁶ Therefore, it can be inferred that mainstream environmental sociology gives special attention to economic notions of the environmental–societal correlation in the sense that the most cited challenge is overpopulation with a growing shortage of resources and conflict over what is left. Without neglecting the facts that human beings conduct their social interactions in an industrial system and economic growth is key, other behavioral patterns focused on political processes should also be studied. In the following paragraphs, the exercise of raw political power in societal–environmental analysis is emphasized.

According to *International Alert*¹⁷ most of the poorest countries in the world face the problems of climate change and violent conflicts. At least 46 states with a total population of 2.7 billion people are confronting these phenomena. These nations that are facing a high risk of emerging conflicts are marked by a combination of current or recent wars, poverty, inequality, and governability problems (corruption, poor systems of justice, and fragile economic regulations). These intersected challenges are also fueled by the exposure to natural disasters and reduced adaptive capacity. In that sense, weather-related catastrophes exacerbate preexisting conflicts and increase vulnerability.¹⁸ As a result, a combination of intrastate wars, demographic pressure, and environmental stress are amplified by climatic volatility, which reduces access to vital natural resources.¹⁹ When this process occurs in the context of a fragile institutional capacity of governments to provide services across the whole territory (that would otherwise support a more peaceful environment), the risk of intergroup systemic violence increases.²⁰

The dependence on limited resources in these commodity-based economies becomes particularly complex in cases involving the extraction of raw materials that are highly valued in the trade market. In such cases, neo-Malthusians argue that population growth and resource limitations cause violent intrastate conflicts in conjunction with certain social conditions (e.g. environmental degradation and depletion). This phenomenon is called ‘the resource curse hypothesis’.²¹ An opposing conceptual framework that is used by neo-classics argues that the abundance of natural resources is what increases the likelihood of conflicts. This ‘honey pot hypothesis’ reveals that the control and exploitation of renewable and non-renewable resources can cause and/or prolong small wars, as insurgents can have the financial capacity to expand their networks.²²

In line with the information presented above, Macartan Humphreys²³ argues that countries with wealth that is highly dependent on the export of commodities are more likely to face civil violence. This phenomenon can be

triggered by six mechanisms: the *greedy rebels approach* (domestic groups engage in criminal activities to obtain benefits from resources independently); the *greedy outsiders mechanism* (natural resources become an incentive for third parties such as states and corporations, which promotes conflicts); the *grievance mechanism* (natural resource dependence relies on grievances rather than greed); the *feasibility mechanism* (natural resources can finance rebellions that started for another reason, which constitutes a permissive cause); the *weak states mechanism* (governments that depend on natural resources, rather than taxation, have weaker bureaucratic institutions and a diminished linkage with society); and the *sparse network mechanism* (the fragility of the manufacturing sector and the fragmentation of the economy can increase the emergence of violence).

Although the six mechanisms interconnect natural resources with violence, it is important to distinguish among different types of violence. In this case, social conflicts and non-systematic violence are not addressed. However, the operationalization of war as a theoretical term is not a simple task since some conceptual frameworks are derived from policy analysis as opposed to scientific studies. Some of these definitions are *ethnic wars*, *wars of the third kind*, *fourth-generation wars*, and *non-Trinitarian wars*.²⁴ Another problem related to the latter is quantitative. Specifically, it is difficult to measure and classify them.

From a normative point of view, the 1949 Geneva Conventions determined that war emerges when the situation reaches a level that is distinguished from other forms of violence such as disturbances, riots, or sporadic violent acts. At the same time, the criteria follow some patterns. First, in terms of the *intensity of violence*, the state is obliged to use its army, as the police can no longer manage the situation. Additionally, *the duration of the conflict*, *nature of weapons*, *displacement of civilians*, *territorial control*, and *number of victims* are key factors. Finally, there should be an *organization of the parties* in terms of the command structure, ability to recruit and train new combatants and existence of intra-organizational rules.²⁵

War can also be studied from a sociological perspective as a phenomenon that is triggered by intensive social development that requires considerable organization and a justifying ideology.²⁶ This idea is consistent with the correlation concerning environment and war in the sense that developmental issues seem to constitute a nexus between both variables. However, ideology does not exhaustively explain the phenomenon. As already mentioned, economic gain rather than political prerogatives constitutes the main incentive of these wars²⁷; therefore, it can be inferred that criminal activity is a core factor in the current geography of systemic violence. Herfried Münkler²⁸ argues that since nation states can no longer monopolize war in tactical terms, irregular armed organizations play a leading role because war is their permanent field of activity. In that sense, wars are marked by the privatization of violence because direct belligerence is economically accessible.

In sum, prolonged small wars are marked by a complex network of non-state combatants and organized crime structures. These wars are fought within the boundaries of a state that cannot decisively dominate taxation and the exercise of legitimate coercion in the whole territory. Also, the literature review in this research paper suggests that either the *greed* or *grievance* mechanism are enabler factors of small war occurrence in polarized societies highly dependable on few commodities.²⁹ However, the feasibility to loot or exploit natural resources dominated by insurgent groups as a 'quasi-criminal activity'³⁰ is not the only determinant factor in the environmental-war correlation; as explained in the following sections, the relationship between social groups and the ecosystem is also marked by the warfare ecology paradigm, the environment as a target ideal-type and the effect of climate volatility on intergroup violence as a threat multiplier.

As a secondary aspect of analysis, social groups that lead contemporary small wars can be identified as *insurgent organizations*. Some features of insurgency are the following: a discourse of grievance as a political injustice; a culturally agile structure and fluid organization and tactics; a self-perception of avengers that justifies violence to win 'the hearts and minds of the people'; and resistance as a long-term strategy (insurgent movements do not seek for a decisive victory but to resist counterinsurgent measures).³¹

Apart from these aspects, insurgency can become the strong side of a small war due to at least two mechanisms: regime constraints or superior strategy. In the first case, insurgent groups use in their favor the delicate balance of tolerance that democracies confront. Democratic countries cope with the unwillingness of society to sustain small wars and the illusion of an effective victory with low casualties and a high-technology massive military operation.³² There are moral restrictions that need to be acknowledged in a democratic country: citizens oppose violence against foreign countries and every intervention must be politically meaningful.³³ As a counterpoint, another perspective states that in the post-World War II phase barbarism became a significant strategy in small wars. Therefore, the predictor of conflict outcomes is not regime but strategic interaction. When actors use similar strategic methods, strong actors win decisively; but when they use opposite approaches weak actors are more likely to succeed.³⁴

Despite the differences between each explanation of insurgent social behavior and success, the common factor seems to be an intangible aspect such as will, morale, organization, or discipline. However, a decisive variable of insurgent success is access to material resources.³⁵ Overall, these insurgent groups do not intend to replace the state and establish a new regime but they just increase corruption and undermine the rule of law still making use of the social welfare that states provide.³⁶

In quantitative terms, the *Heidelberg Institute for International Conflict Research*³⁷ study classifies three levels of war using the conflict means (the use

of weapons and personnel), the number of casualties, destruction and refugees as proxies. In that sense, a *violent crisis* has fewer than 120 casualties and 6000 refugees per year, whereas a *limited war* involves fewer than 360 casualties and fewer than 120,000 refugees per year. A *war* occurs when there are over 1080 casualties and more than 360,000 refugees annually. The empirical examples in this research are consistent with the aforementioned theoretical definitions and its operationalization.

The examples that follow are wars. In that sense, three proxies can be added: cause (dominion over natural resources or the effect of the ecosystem on inter-group violence), intensity (following the criteria for a violent conflict) and public exposure (systematically covered in the media). These proxies can be used to identify four behavioral patterns of the environmental–violence intersection. Thus, the first pattern, which is defined as *resource-based wars*, holds that the environmental factor is related to a fight for control of natural resources (oil, arable land, water), particularly in polarized societies that are highly dependent on commodities. Second, the *warfare ecology paradigm* emphasizes the non-premeditated damage in preparation for as well as during and after conflicts (mining fields, chemical contamination, and landscape cratering). Third, the *environment as a target of conflict* pattern refers to intended attacks on the ecosystem (contamination of water or bombings over oil extraction fields). Finally, the *insurgency–climate intersection* pattern stresses that a deviation in climate change increases the frequency of violence. In this regard, global warming could have a large impact on social interaction and the emergence of new wars.

Resource-based wars

Increased demands from societies that are not addressed by governments generate exceptional political burdens that escalate in many cases into internal armed conflicts. However, this might imply that a given country could have violent conflicts every time that the government does not assure the provision of public goods when consumers exceed supplies. The first distinction is that not all commodities have the same value in the stock market; therefore, some lootable resources that are especially valued to the detriment of others have a greater influence on the potential outcome of a small war (mainly those from extractive industries). The ideal-type is also related to structural problems of governance and the incapability of a government to exercise the monopoly of violence.³⁸

Resource-based wars are strongly related to what was previously described as the honey pot and resource curse phenomena. The common factor in both perspectives is dependency on natural resources for economic growth, which is known as the ‘Dutch disease’. This resource dependence leads to negative outcomes in terms of poorer rates of development and a tendency toward political crisis and even armed conflicts. In contrast, some of the most innovative

industrial economies are based in countries that lack a large amount of natural resources such as Israel and the Asian Tigers.

According to Paul Collier³⁹, the most important risk factor of conflicts is the share of GDP derived from the export of primary commodities. Geography also matters. If the population is dispersed, the government faces greater difficulties in governance and control. History is another relevant factor. If a country has recently had a civil war, immediately after the end of the hostilities, there is a 40% chance of a new conflict. Finally, economic opportunities matter. Conflict is more likely to emerge in countries with fast population growth and little education. Common features of commodities-dependent countries are a less skilled workforce and less investment in education but oil- and gas-dependent economies are more likely to be governed by non-democratic regimes with limited political freedoms and higher levels of corruption.⁴⁰ For example, countries with oil-based economies such as Angola and Sudan spend between two and ten times more on their militaries and experience a resource curse that leads to long-term civil wars. At the same time, other states and corporations intervene in their domestic politics to maintain a beneficial position in terms of revenues and resources.⁴¹

Other distinctions worth mentioning are that not only the scarcity or abundance but also the degrees of *magnitude* and *fluidity* of natural resources that can cause the emergence of this type of violent conflict. For example, some attributes such as the ease of removal or global consumption trends have a strong influence on the phenomena.⁴² The concentration of resources, actual mechanisms of greed and grievance, as well as the incidence of rebellion are linked to the motivation, opportunity and identity of rebel groups.⁴³ Phillipe Le Billon⁴⁴ argues that the duration and termination of conflicts depend on *accessibility* in terms of the ease with which a rebel group can access revenues of natural resources and *legality*. The interaction of both conditions results in four main categories: the illegal availability correlation (e.g. narcotics); the legal availability correlation (e.g. alluvial diamonds); the legal non-accessible correlation (e.g. off-shore oil) and the illegal non-accessible correlation (e.g. uranium). On the other hand, the emergence of these long-term violent conflicts that usually turn into civil wars should not only stress a greed or grievance mechanism but also lead to institutional breakdown in terms of the failure of the social contract.⁴⁵

There are several case studies that can be framed as resource-based small wars. Within the category of legal availability, many reviews have explained hostilities financing and violent motivations as linked to alluvial diamonds. Precious gems are the primary motive of greed-driven wars, which are mostly controlled by warlords. In terms of the number of deaths and intensity, the most important examples of diamond-dependent countries that confronted wars in the 1990s are focused in sub-Saharan Africa such as the Democratic Republic of Congo, Angola, and Sierra Leone.⁴⁶ Warlordism constitute a relevant example of insurgency that usually uses violence as a tool to regulate markets

transforming violence into some type of merchandise.⁴⁷ African warlordism, in particular, has specific features that need to be acknowledged⁴⁸: it becomes predominant where there is a deficient provision of public goods and services; it requires a hierarchical political control focused on the leader based on charisma and patronage; anarchy is the most important enabler factor of success; and the geopolitical control of lootable natural resources affords the material means for the warlords' monopoly of violence.

Overall, this ideal-type of environmental-war interconnection is the most relevant in the sense of an ever-growing trend due to massive revenues and the multiple interests involved at the local and global levels. The ecosystem capacity in countries that are overwhelmed by prolonged intrastate wars dominated by insurgent groups often intersects with international trade and overlapping geopolitical agendas. For example, Michael Klare⁴⁹ states that to enhance their own economic growth, some countries are leading a race to make the most of the planet's remaining resource reserves frequently placed in conflict areas. This, in turn, means that insurgency can no longer be seen as an autonomic deviant behavior of the 'losers of globalization' but a complex network of interests at a worldwide level.

Moreover, Nils Gilman⁵⁰ offers an innovative analysis by arguing that insurgency no longer consists on social revolutionaries that seek to capture the state; the contemporary phenomenon is a combination of 'twin insurgencies': a *criminal insurgency* focused in protecting their own economic interests in the market that they control and intensify (drug cartels, guerrillas, and warlords); and a *plutocratic insurgency* which is an ultra-wealthy new social group driven by a raw cost-benefit logic (libertarian activists, mineral extraction magnates) that seek to disengage from the state's regulations and defund or privatize public institutions with the aim of rewriting social contracts.

In that regard, corruption becomes a key concept to understand the durability of small war conflicts since it undermines the state's capacity to provide public goods and services across its territory and implement counterinsurgent strategies. In this sociopolitical context, conflict prevention systems are still possible if corruption is targeted as a significant explaining factor. Diversification strategies, defensive measures focused on protecting assets from capture, regulation of extractive industries by developed countries, and investment in social development are some plausible initiatives.⁵¹

The warfare ecology paradigm

This notion emphasizes the relationship between the environment and warfare to study and mitigate catastrophic events (climate change, biodiversity loss) and promote restoration techniques for war-dominated ecosystems. Warfare ecology applies ecological theories to the three stages: preparations, war and post-conflict. It stresses biodiversity conservation to elevate the topic for

consideration in policy analysis and war-contingency planning in national conservation programs.⁵² As a general context, dating back to 2008, there have been 122 armed conflicts in the previous 17 years. War preparations alone used up to 15 million square meters of land, consumed 6% of raw materials and produced 10% of global carbon emissions annually.⁵³ Every phase has ecological consequences. For instance, preparations for modern warfare alone involve major consumption of natural resources as well as strategic material storage, testing of new weapons, and use of multiple locations for training and associated facilities. Active training usually generates residual unexploded weapons, chemical contamination, landscape cratering, vegetation removal, and soil erosion. In turn, the new type of armed conflicts leads to alterations of habitats, pollution, and uncontrolled extraction of resources.

In the same token, the pre-deployment of forces imposes a global shock of carbon dioxide emissions and a negative impact on human health as well as on plants and animals. Additionally, soil erosion is worsened by the accumulation of unexploded warfare material. The development of conflict is marked by a loss of biodiversity, contamination of reserves, and increased demands for natural resources. The post-conflict phase is marked by continued risk of contamination by military artifacts, landmines, depleted uranium and long-term pollution of groundwater.⁵⁴

Countermeasures in the pre-deployment phase can be triggered by a human-natural system approach in the selection of sites for weapons testing (e.g. sparsely populated areas to diminish the impacts on the civilian population and reduce the negative effects on nature). This perspective is called the 'human ecosystem model', and the objective is to moderate the environmental impact of military activities in preparation for war.⁵⁵ Another concrete initiative is 'biomonitoring', which is the use of biological entities as detectors to determine environmental conditions and assess exposure and possible effects. Human monitoring uses biomarkers to indicate environmental damage, diseases and genetic susceptibility.⁵⁶

In the postwar phase, ecologists can promote ecosystem restoration in relation to any peace process. However, the field is a gray area between mitigation policies and mere public relations. A concrete measure is the promotion of clean water and locally produced food or the construction of 'peace parks' as protected territories.⁵⁷ However, the environmental degradation relating to land contamination not only affects the possibilities of sustainable development in the long term and impacts livelihood by severely reducing arable land but also expels the population to new places.

Overall, the new warfare ecology perspective is relevant in the sense that it highlights ecosystem damage as inherent collateral damage that particularly affects the postwar phase in terms of prospects for reconstruction and development. A detailed analysis of the environmental impact of war argues that because natural ecosystems are considered to be 'terrain' in military terminology

from an anthropocentric rather than an eco-centric vision, its integrity is often still neglected as part of the battle scars.⁵⁸

The environment as a target of conflict

This type of small war–environment intersection refers to intended attacks on the ecosystem. In other words, it is deliberate harm on natural resources for political purposes. It is usually considered as a terrorist action since it does not follow the Geneva Conventions' provisions of warfare, and a primary motivation is to impose a psychological effect on the civilian population. However, methodologically speaking, the relationship between terrorism and the environment is still quite ambiguous. For instance, there are at least three conceptualizations that are sometimes confused as synonyms: *eco-terrorism*, *environmental terrorism*, and *environmental warfare*.

When built environments such as roads and buildings are the main target in the name of saving the environment from human intrusion, it can be called *eco-terrorism*.⁵⁹ As a general definition, it is the unforeseen violent destruction of property, typically by radical environmental groups. The ideology is based on deep ecology, and the aim is to raise public awareness of the advanced exploitation of natural resources. An example is the *Earth Liberation Front* (ELF), which has been considered by the FBI as one of the most active terrorist groups in the US.⁶⁰ Environmental warfare, on the other hand, refers to collateral damage that arises during a military operation. It does not violate the *jus in bello* criteria since the aim is to defeat enemy forces.⁶¹ Although environmental resources are extensively consumed and later impaired, the ecosystem is not a deliberate target. Some examples are the diminishing or destruction of water sources, mineral sites, wildlife, and energy systems.

The third type, environmental terrorism, can be defined as the unlawful use of force against environmental resources to produce a psychological effect on the population. As opposed to eco-terrorism, the target is not the built environment but the natural environment itself.⁶² This definition is the closest to the exploitation of the environment as a target of conflict because it involves the intention deprivation of the local population from using natural resources for survival and economic development.

There have been some critical examples since the end of the cold war starting with the case of the Persian Gulf War where the term 'environmental terrorism' arose. At the end of the Gulf War, when the Iraqi forces were defeated, in preparation for their withdrawal, the government ordered the release of millions of barrels of crude oil into the Persian Gulf waters. The smoke blocked out the sun, highly acidic rain affected crops, and animals and water sources were affected. Furthermore, there was choking fog at the ground level.⁶³ The Bush Administration called this act as environmental terrorism for the first time in modern history.⁶⁴

Eco-terrorism at a local level requires specific criminal acts in each country to codify these criminal actions and enable law enforcement. At the same time, environmental warfare is an unclear part of *jus in bello* and can be related to the second behavioral pattern mentioned in this research paper, the warfare ecology paradigm. That is why it is not applicable to this kind of war–environment correlation. Finally, environmental terrorism seems to be the most accurate in terms of identifying deliberate attacks on natural resources with political purposes that create a critical situation for subsequent human survival. In the end, the target is the people, rather than a natural resource.

Insurgency and climate variability

Climate change is a source of ecological stress that has an impact on the correlation between society and nature that needs to be measured due to its relevant consequences. This fourth (although still experimental) behavioral pattern notes that a deviation in climate change increases the frequency of intergroup violence. At a psychological level, some research would suggest a link between temperature and aggression, explaining that heat changes human conduct by increasing anger and retaliation.⁶⁵

While modern economies are rather insulated from local variations in weather and the food supply, environmental degradation and climate irregularity particularly impact commodity-based economies, elevating the risk of violence due to the control of scarce resources. Some of the most affected countries identified with this trend are in South Asia and sub-Saharan Africa.⁶⁶ Although most countries are equally subject to the effects of a variable climate, the ‘consequences of the consequences’ are dissimilar in the sense that adaptation measures are in the center of governance and the state’s capacity to provide public services and build international cooperation.⁶⁷

An investigation published by Burke, Hsiang, and Miguel⁶⁸ systematized the violence–climate correlation using econometric methods in a sample of 55 empirical studies. They concluded that the median effect of a 1-degree change in climate is an 11.3% change in the risk of intergroup conflict. Additionally, the cumulative effect of rainfall in a two-year period is substantive (3.5%/degree). In sum, research results indicate that deviations from moderate to warmer temperatures and changes in rainfall patterns increase the risk of interpersonal and intergroup conflicts. Nevertheless, it is not a causal relationship, so it is not deterministic; it only adds another relevant factor to already existing political and social pre-conditions. However, other scientists rejected this interrelation between climate change and violence by saying that conclusions are not exhaustive since most cases studied are centered in sub-Saharan Africa.⁶⁹

Although many of the examples are often been studied as a resource-based struggles, weather shocks particularly affect intergroup violence in pastoralist and agro-pastoralist areas where arid and semi-arid conditions act as reinforcing

factors. A USAID report⁷⁰ indicates that erratic weather has a destabilizing effect by increasing insecurity in rural areas as well. Some of the most important cases (Uganda, Ethiopia, Niger, and Burkina Faso) have as a common feature pastoralism as a main form of survival that entails cultural practices based on mobility to make use of natural resources. However, it is pertinent to note that not all cases have the same propensity to the emergence of insurgent social behavior.

Climate change seems to act as a threat multiplier with strategic significance. It increases the likelihood of a conflict, particularly in pastoralist communities when there is scarcity of natural resources. In that context, uncertainty about the food supply becomes problematic which can trigger a grievance mechanism. At the same time, corruption and the lack of governmental capacity to manage climate risks can also make a nation more fragile. Current examples of this phenomenon include the conflict in overpopulated nomadic lands in Somalia; the confrontation between pastoralists and refugees displaced from their cropping lands by drought in Sudan and the land shortage in Rwanda.⁷¹ However, it is relevant to stress once again that the relationship is not linear as increased temperature, drought and rainfall changes are only additional aspects that influence the emergence of different types of conflicts among other enabling factors.

An alternative perspective proposes the concept of *environmental peace*⁷² by focusing on the link between climate change and peace instead. The main factors are measures that make societies resilient against environmental degradation, conditions that make cooperation in relation to environmental problems fail, and the influence of environmental tension on intergroup relations (from cooperation to conflict). Along those lines, the G7 report under the German presidency includes three recommendations for action on climate management for peace: climate change adaptation; increased development and humanitarian aid; and improved peacebuilding and conflict prevention to reduce political tensions and lower fragility indicators.⁷³

Overall, some studies have concluded that global warming is affecting social interactions from a psychological point of view (increased aggressive behavior) to a macrosocial trend that links climate change with intergroup violence (potentially increasing the occurrence of violent conflicts). Not only does unpredictable meteorological conditions create food insecurity but also weather-related disasters and major crises retro-feed existing sociopolitical instabilities and some governments' incapacity to moderate the consequences. Nevertheless, this link between climate and violence is still exploratory so that it would need further theoretical exploration and empirical evidence to establish the reliability of this last ideal-type over time.

Applied environmental dimensions of small wars: Afghanistan and Colombia

Because of the multiple political, social, and economic differences, these two cases of study cannot be compared. Still, the common factor (at least until the

2016 peace agreements in Colombia) is that both countries confronted insurgencies centered in land control for illicit drug production for over 30 years and have been exposed to the four sociological patterns of the war–environment intersection. Alain Labrousse⁷⁴ argues that Colombia and Afghanistan are the world's largest producers of cocaine and opium correspondingly; in that context, the Marxist guerrilla called Armed Revolutionary Forces of Colombia (FARC) and the Taliban as the most politically relevant fundamentalist group in Afghanistan have reinforced their activities through the revenues of drug-trafficking. Similarly, in Afghanistan and Colombia the environment becomes a pertinent factor that matches the intensity, features, and public exposure of small wars.

For instance, the greed and grievance mechanisms have been core motivations for the persistence of insurgent groups in both countries. Hence, a recent analysis of the Colombian case argues that there has been a combination of armed conflict, drug-trafficking and a lasting violence triggered by a territorial logic which involves the geostrategic importance of illicit crops and lootable natural resources (gold, charcoal, oil)⁷⁵ led by the guerrillas.⁷⁶

The latest coca cultivation census produced by the United Nations and the Colombian Government illustrates a 39% coca cultivation increase between 2014 and 2015. This situation has been partially offset by ongoing counter-narcotic policies such as cocaine confiscation (71% was impounded) and the destruction of illegal cocaine labs (64% of labs were demolished).⁷⁷ According to the 2016 peace agreement released by the Presidency in August, the FARC was expected to abandon drug-trafficking, considered their main source of profit. Nevertheless, contrary to the general belief that this action could block the guerrilla's financial resources, since the beginning of the peace process there has been an escalation of illegal gold mining which diversified the FARC's resource portfolio. Although the national government has publicly acknowledged the problem, alluvial gold illegal mining and trade is less traceable for government agencies as it is a legal and renowned asset in the world market, highly tradable, easy to transport in small amounts and lootable; for those reasons, it now constitutes a new driver of violence.⁷⁸

In parallel, the land in Afghanistan is home to numerous agricultural products, minerals, and other natural resources; but more than three decades of war has generated environmental degradation, pollution and predation of natural resources, which exacerbates existing political vulnerabilities and reduces the access to ecosystem services.⁷⁹ At the same time, livelihood depends strongly on commodities: almost 80% of the country's population live in rural regions, which makes them highly vulnerable to the impacts of natural phenomena and the effects of internal armed conflict. The country's environmental problem represents a strategic factor since only 12% of the land is arable and 4–5% irrigated, while 7% is rain-fed and cropped opportunistically.⁸⁰ The management of arable land and the access to water are the two most important elements of dispute within local communities.

A war economy based on the fight over livelihood resources counteracts any incentives for peacebuilding efforts. The drug trade is therefore one of the main pillars of the Afghan economy for an estimated 16% of GDP, involving approximately 5% of population. Overall, Afghanistan still produces 90% of the global opium and hashish.⁸¹ In this context, the Taliban are still involved in tribal conflicts; and since most of these tribes are competing for drug smuggling, the Taliban are also implicated in drug-trafficking and maintain a complex affiliation with traffickers.⁸² At the same time, the insurgency includes a new generation of young warlords that own their private armies, provide social services in their areas of influence, shape policies at different levels, and intimidate political opponents, also facilitated by the revenues of drug-trafficking.⁸³

As a second aspect in accordance to the warfare ecology paradigm, in Afghanistan two of the most important consequences are the contamination of land and landmines, that are unexploded and scattered throughout the country in urban and commercial areas, farmland and grazing lands. Mine and UXO contamination affects almost all regions of the country.⁸⁴ Since 2002, despite international efforts the devastating environmental crisis has not been solved. Colombia, on the other hand, was considered in 2013 as the second country in the world for citizen deaths provoked by landmines and other unexploded artifacts (leaving aside the victims that have been injured, handicapped, or amputated due to explosions from mines and improvised devices); since 1990 at least 10.000 civilians and military personnel were killed or injured from landmines and UXO.⁸⁵

With regard to the third behavioral pattern, environmental crimes have been shaded from the global public opinion while at the same time have endangered the livelihood of numerous communities over the past decades in both cases. For instance, according to the Colombian Foundation *Ideas for Peace*, in 2014 alone the FARC has perpetrated 130 attacks against the oil infrastructure in less than 2000 meters away from the river; 23 of these attacks against the ecosystem took place in protected areas due to its rich biodiversity. However, the environment as a target in the Colombian small war begun as a systematic practice since 1986 when the National Liberation Army (ELN) started attacking the oil infrastructure with dynamite contaminating soils and rivers.⁸⁶ In the case of Afghanistan, despite the presidential decree banning the importation of fertilizer chemicals typically used for roadside bombs in 2011, the material is still being smuggled from Pakistan. As a result, insurgents still aggravate the ecosystem damage through these and other improvised explosives.⁸⁷

Lastly, in terms of climate change and intergroup violence correlation, it can be argued that the environmental degradation regarding contamination of land not only affects the possibilities toward sustainable development in the long term and impacts the livelihood by severely reducing the arable land, but also expel the population to new places. According to a United Nations report,⁸⁸ Colombia is particularly vulnerable to climate change because a numerous

population is located in flood costs and unstable soils in the upper parts of the mountains. Moreover, the large recurrences of emergencies associated with extreme climate events directly affect the development of human settlements. The lingering environmental degradation constitutes a relevant disrupting factor in the Colombian case. In that sense, Stephanie Lavaux argues that although the environment has not been officially *securitized* yet, Colombia fulfills most of the factors that trigger environmental stress as a source of social destabilization.⁸⁹

Meanwhile, 19 million Afghans living in rural areas are vulnerable to recurrent natural disasters such as desertification and floods, generating new waves of refugees and environmental degradation.⁹⁰ The *2013 USAID Background Afghanistan report* states that over the last 10 years, natural disasters, including droughts, floods, landslides, earthquakes, and avalanches affected between 250.000 and 400.000 Afghans each year. This climate erraticism is a threat multiplier as food supply and access to basic resources becomes a challenge.

Conclusion

There is no clear scientific evidence that the mere scarcity of natural resources has a direct impact on the emergence of small wars, nor is solely the abundance of resources the key to explain such social behavior. Instead, at this point, it is possible to infer that both conditions known as the resource curse and honey pot notions can lead to intergroup violence. The factor is, therefore, not wealth or shortage, but the fight for control of existing natural resources. A quantitative study that included a large sample found that a country's resources is what has a statistically significant influence on the likelihood of war.⁹¹ The second conclusion was that the inclination toward violent conflicts is higher in countries with social polarization, political instability, and prominent dependency on ecosystem services. As a retro-feed situation, most resource-based conflicts conclude in the so-called Dutch disease, which causes lower rates of development and a higher propensity for a new political crisis. Third, the insurgency that leads small war scenarios no longer consists of belligerents, guerrilla movements and warlords, it also includes plutocratic insurgents in the form of an ultra-rich new class⁹² that embraces disengagement of governments regulations. This kind of insurgent groups coexist with illegal transnational networks deepening corruption practices. In that regard, there is a complex combination of bottom-up and top-down insurgencies.

As final remarks, four ethical concerns regarding each behavioral pattern are identified. The first remaining ethical concern is that many intrastate wars occur in countries where certain commodities have a high value (diamonds, oil) in the international trade market; therefore, any political change, including the end of a conflict, would have an impact on industrialized economies. For instance, prices of commodities consequently could be raised. The ethical challenge for the international community in cooperation with multinational corporations

involves how to implement short-term strategies in terms of remedies and regulations to lower the political influence of insurgent groups and long-term strategies to build local capacities for environmental management. Moreover, to some extent, the warfare ecology paradigm is an unavoidable trend in environmental degradation every time the occurrence of resource-based wars is higher. Given this situation, the environment in the context of warfare is still only considered as a political and legal issue; an extensive scientific approach would contribute with policy-makers toward new viable decisions. In practice, some specialists suggest that the *United Nations Environmental Program* (UNEP) should incorporate a legal framework to safeguard natural resources such as fixing prices for ecosystem services to discourage violent conflict occurrence.⁹³

A lingering ethical issue in this pattern involves whether it is possible to implement a 'green ethic' in modern armed forces. In other words, is it plausible to strategically plan, train and implement a *greening military*? This notion implies the inclusion of pre-determined environmental protection measures during military operations. Intuitively, such regulations or policy initiatives seem contradictory to the nature of military performance compliance. In most national defense frameworks, the main objective of this state organization is to succeed in warfare by defending the territory from potential enemies. Therefore, it is difficult to envision how to lead a military operation while safeguarding the environment at the same time. The environment as a target of conflict, interpreted as the result of premeditated terrorist attacks on the environment to threaten the local population and communicate a certain political message to the world, entails an ethical concern that is similar to 'just and unjust wars'. Ultimately, the so-called environmental terrorism is a larger moral discussion. What is just for one side is unjust for the other. This complexity is related to moral internationalist standards and self-perceived righteousness.⁹⁴

Finally, in the examination of the fourth pattern if an unpredictable climate increases the occurrence of intergroup violence, is climate change a developmental issue or also a security concern? If it is the latter, countries that produce more carbon dioxide emissions need to address this problem. If so, multilateral agreements and international protocols are not only a matter of ecological modernization for a sustainable economy but also an environmental security concern. As a final remark, the link between society and nature is mediated by both structural and circumstantial notions. In the first case, from a macrosocial viewpoint, human beings interact with the natural environment not only to ensure their survival but also to exercise their political supremacy over others. At the same time, weather-related events and the cumulative effects of those social interactions affect the livelihood of individuals, creating new constraints for economic survival and sociopolitical challenges. In current societies, the Malthusian complexity seems to prevail in a world where an ever-growing population meets higher demands for energy, water, food, and fuel. Overall, at least four violence-environment patterns have emerged, leaving four ethical concerns

unaddressed. In this context, scientific knowledge has a great deal to offer in the search for new answers to shape an environmentally resilient and peaceful world for a better tomorrow.

Notes

1. Joas, "Guerra y Modernidad," 171.
2. Simmel, "El conflicto," 19.
3. See Nievas, "Sociología de la guerra."
4. See note 3 above.
5. This sociological understanding of power includes the use of force or any other justification to comply with the individual subject's will. It is also based on the idea of domination. However, a dominant relationship is not necessarily adverse, it can also be cooperative. In such cases, Max Weber explains the concept of authority as the legitimate acceptance of a command where one of the key attributes is the voluntary compliance by subordinates in a collective context. See Grimes "Authority, Power, Influence and Social Control," 725.
6. Kaldor, "Old Wars, Cold Wars, New Wars," 492.
7. Korf, "Resources, Violence," 735.
8. See note 7 above.
9. Bourm, "Seven Pillars of Small War," 35.
10. See Buhaug et al., "One Effect to Rule Them All?" 393.
11. Mehta and Ouellet, "Environmental Sociology."
12. See Catton and Dunlap, "Environmental Sociology."
13. Dunlap, Mitchelson, and Stalker, "Environmental Sociology," 10.
14. Ibid., 11.
15. See for example, McKinney "Entropic Disorder"; De Esteban Alonso, and Antonovica, "Los orígenes de la sociología medioambiental"; and Buttel, "Sociological Theory."
16. Byrne, Glover, and Alrøe, "Globalization and Sustainable Development."
17. Smith and Vivekananda, "A Climate of Conflict."
18. Harris, Keen, and Mitchel, "When Disasters and Conflicts Collide."
19. Kahl, "Demographic Change, Natural Resources and Violence."
20. Barnett and Adger, "Climate change, Human Security and Violent Conflict."
21. See note 19 above.
22. See note 19 above.
23. Humphreys, "Natural Resources, Conflict and Conflict Resolution," 510–513.
24. Rickli, "The Impact of Globalization."
25. Vité, "Typology of Armed Conflicts."
26. See for example, Malesevic, "The Sociology of War."
27. Kaldor, "Old Wars, Cold Wars, New Wars," 492.
28. Münkler, "Viejas y nuevas guerras."
29. See for example, Collier, "Economic Causes of Civil Conflict"; Kahl, "Demographic Change, Natural Resources and Violence"; Humphreys, "Natural Resources, Conflict and Conflict Resolution"; and Le Billon, "Natural Resource Types and Conflict."
30. Korf, "Resources, Violence," 733.
31. Borum, "Seven Pillars of Small War," 37–41.
32. Merom, "How Democracies Lose Small Wars," 249.
33. Ibid., 244.

34. Arreguin-Toft, "How the Weak Win Wars," 18.
35. Record, "External Assistance," 37.
36. Gilman, "The Twin Insurgencies," 47.
37. Heidelberg Institute for International Conflict Research, "Conflict Barometer," 9, 10.
38. See for example, Le Billon, "Natural Resource Types and Conflict"; and Humphreys, "Natural Resources, Conflict and Conflict Resolution."
39. Collier, "Economic Causes of Civil Conflict," 6.
40. Humphreys, Sachs, and Stiglitz, "What is the Problem with Natural Resource Wealth?" 10.
41. *Ibid.*, 13, 14.
42. See O'Lear and Tutton, "Environment and Conflict."
43. See Lujala, Gleditsch, and Gilmore, "A Diamond Curse? Civil War and a Lootable Resource."
44. Le Billon, "Natural Resource Types and Conflict," 19.
45. Murshed and Tadjoeeddin, "Revisiting the Greed and Grievance Explanations," 103.
46. Le Billon, "Diamond Wars?" 350.
47. Münkler, "Viejas y nuevas guerras," 23.
48. Freeman, "The African Warlord," 793–795.
49. Klare, "The Race for What's Left," 12.
50. Gilman, "The Twin Insurgencies," 47–52.
51. Humphreys, "Natural Resources, Conflict and Conflict Resolution," 533–535.
52. Hanson, "War and Biodiversity."
53. Machlis and Hanson, "Warfare Ecology," 729.
54. See Machlis and Hanson, "Warfare Ecology."
55. Dalton, "Application of the Human Ecosystem Model."
56. Horvat, "Environmental Biomonitoring."
57. Nature, "Spoils of War."
58. See Lawrence et al., "The Effects of Modern War."
59. Chalecki, "A New Vigilance," 48–50.
60. See O'Lear, "Environmental Terrorism."
61. See note 59 above.
62. See note 59 above.
63. Warner, "The Environmental Consequences of the Gulf War."
64. See Broader and Dolen, "Iraq Unleashing Oil into Gulf."
65. Larrick et al., "Temper, Temperature and Temptation."
66. See McNeely, "Climate Change, Natural Resources and Conflict."
67. Smith and Vivekananda, "A Climate of Conflict."
68. Burke, Hsiang and Miguel, "Climate and Conflict."
69. Buhaug et al., "One Effect to Rule Them All?" 393.
70. See Stark, "Climate Change and Conflict."
71. See McNeely, "Climate Change, Natural Resources and Conflict," 47, 48.
72. Ide and Scheffran, "On Climate, Conflict and Cumulation."
73. See Rüttinger et al., "A New Climate for Peace."
74. Labrousse, "The FARC and the Taliban's Connection to Drugs," 169.
75. Salazar, "Lógicas territoriales," 157–160.
76. The two most numerous lingering guerrillas are the Revolutionary Forces of Colombia (FARC) and the National Liberation Army (ELN).
77. UNODC, "Colombia. Monitoreo de territorios," 11.
78. Rettberg and Ortiz-Riomalo, "Golden Opportunity," 83.
79. United Nations Environment Program, "Afghanistan's Environment."
80. United Nations Environment Program, "Environment and Energy."

81. UN Country Team in Afghanistan, *Natural Resource Management*.
82. Felbab-Brown, "La situación petrolera actual," 22.
83. See Peter, "A Changing of the Guard."
84. Sharma, "Landmines in Afghanistan."
85. Dennis, "US Sees Advances in Colombia's Landmine Removal."
86. El Tiempo, "Los crímenes ecológicos de la guerrilla."
87. Katzman, "Afghanistan: Post-Taliban Governance," 331.
88. Programa de Naciones Unidas para el Desarrollo, "El cambio climático en Colombia."
89. Lavaux, "Degradación ambiental y conflictos armados," 27.
90. UNEP, "Afghanistan's Environment."
91. Reuveny and Barbieri, "On the Effect on Natural Resources."
92. See Gilman, "The Twin Insurgencies."
93. Francis and Krishnamurty, "Human Conflict and Ecosystem Services."
94. See Orford, "Moral Internationalism."

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