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A microdynamics approach to geographies of violence: mapping the kill chain in militarized conservation areas

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Abstract

Within segments of the overlapping fields of political ecology and political geography, there is an emerging consensus that direct physical violence is over-studied, and that it cannot be analytically separated from other forms of violence. This article argues the opposite, namely, that direct physical violence remains understudied, and that analyzing it separately is warranted to grasp its specificities. To corroborate this argument, the article examines the study of green militarization and green violence. Whereas a substantial part of this literature discusses direct physical violence, most studies focus on broader conditions and discourses of violence, without empirically demonstrating how they feed into the production of direct physical violence. Consequently, these studies do not accurately map the entire "kill chain". A case study of violence in Virunga National Park, in eastern Democratic Republic of the Congo, demonstrates the analytical merits of studying direct physical violence through a "microdynamics" approach, implying the detailed study of specific acts of violence and how they were committed. Far from distracting from broader conditions, structures and histories of violence, a microdynamics approach provides an entry point for understanding how these dimensions feed into the production of direct physical violence, and how this violence interacts with other forms of violence. In addition, it allows for a more accurate understanding of how the kill chain is constituted in time and space. The article concludes that acknowledging the particularities of different modalities of violence, instead of conflating them, will significantly advance the study of geographies of violence.

Key words: geographies of violence; political ecology; nature conservation; green militarization; green violence

Introduction

Within the unfolding debate on geographies of violence, there is an emerging consensus that direct physical violence is over-studied. Scholars argue that studying direct physical violence detracts from examining slower, less visible and less spectacular forms of violence, as if these were mutually exclusive projects (Loyd, 2009; Pain & Staeheli, 2014; Springer, 2011). It has also become fashionable to call for the need to "dismantle and re-think the analytical separation between different violences" (Laurie & Shaw, 2018, p.10, drawing on Pain 2014a), in particular the distinction between direct and indirect violence (Tyner & Inwood, 2014; Tyner & Rice,

2016). A similar tendency is visible in the overlapping field of political ecology (Büscher & Ramutsindela, 2016; Nixon, 2011; Witter & Satterfield, 2019). In the influential volume *Violent Environments*, Peluso and Watts propose to "expand the horizons of green violence and to see its genesis and practice in terms of something more than brutal physical acts" (2001, p. 23). Similarly, in a recent discussion of "green wars", Büscher and Fletcher, drawing on Nordstrom (2004), conclude that a narrow focus on direct physical violence "obscures a wider understanding of the nature of violence in its manifold forms" (2018, p.108).

This article goes against the grain of this consensus by arguing there is *not enough* attention to direct physical violence within the fields of political ecology and political geography. It contends that in particular the microdynamics of the ways in which this violence is produced remain understudied. Moreover, direct physical violence needs to be analytically disaggregated from other forms. As posited by a particular strand in conflict studies, a microdynamics approach implies minutiously examining specific acts of violence, including the circumstances in which these acts took place and the modes of acting and reasoning of the perpetrators (Brass, 1997; Brubaker & Laitin, 1998; Kalyvas, 2006). Adopting a microdynamics perspective reveals that in most cases, the production of direct physical violence entails distinct psychological, emotional and physiological processes, being characterized by immediacy, co-presence and high levels of social interaction (Collins, 2008). These differences have implications for the spatialities of what Gregory (2011, p.196) calls the "kill chain", or the dispersed apparatus that configures subjects and their conduct in such a way that they engage in killing. Allen (2003) argues that power has various modalities that have distinct characteristics, and that these modalities are constituted differently in space and time. Inspired by these ideas, this article suggests that violence can also be considered to have different modalities and that the production processes of these different violences have distinct spatial and temporal qualities. Studying these processes in detail, which for direct physical violence requires a microdynamics approach, will lead to a more accurate analysis of geographies of violence.

To corroborate these arguments, I examine studies of conservation areas that are subject to "green violence" (Büscher & Ramutsindela, 2016) and "green militarization" (Lunstrum, 2014). This work is in majority situated within the fields of political ecology and political geography, and is therefore posited to follow similar theoretical trends. Militarized conservation areas harbour a wide range of interacting and intersecting violences, which are characterized by significant power asymmetries (Peluso, 1993; Peluso & Vandergeest, 2011; Duffy et al., 2019) and a pronounced "politics of (in)visibility" (Massé, 2019). These features may cloud the workings of the kill chain, specifically when studies take broader conflicts, discourses or power configurations as an analytical point of departure, without empirically demonstrating how they feed into the actual production of violence. The result is ambiguities surrounding the kill chain, which prohibit an accurate mapping of its spatialities. As a growing number of studies show (Lombard, 2015, 2016; Massé, 2018, 2019), a microdynamics approach can overcome these challenges by unearthing factors in the production of direct physical violence that may otherwise remain obscured.

To further illustrate how a microdynamics approach can provide a more accurate insight into the kill chain of direct physical violence, I present a case study of Virunga National Park in eastern Democratic Republic of the Congo, where I have conducted periodic field research since 2010. This case study also demonstrates that a focus on microdynamics does not necessarily lead to "confining violence to its material expression as an isolated and localized event" (Springer, 2011, p. 90; see also, Laurie & Shaw, 2018; Tyner & Inwood, 2014). Rather, it can serve as an entry point into studying the entire kill chain, including how it is shaped by broader conditions and structures, and how it is constituted in time and space. As such, the study of direct physical violence does not necessarily distract from or obscure other forms of violence, but can provide detailed insight into how different violences interact.

The remainder of this article proceeds as follows. The next section looks at diverging trends in approaches to violence in political geography, political ecology, and conflict studies. This is followed by an analysis of how recent studies of green militarization and green violence relate to these trends. The subsequent section briefly describes the employed methods, which leads up to the description and analysis of the production of direct physical violence by rangers in Virunga National Park. The resulting insights are then coupled back to the debate on geographies of violence. These considerations lead to the conclusion that far from abandoning typologies of violence, we should adopt and refine them, to allow for a more accurate analysis of the spatial qualities of different modalities of violence.

Diverging trends in the study of violence

In both political geography and political ecology, contemporary debates on violence are heavily imprinted by Galtung's (1969) redefinition of violence. Moving away from a "narrow" understanding that sees violence as the intentional, direct infliction of physical harm on people and/or property, Galtung suggests approaching violence as "structural" (1969, p. 170) and "cultural" (1990). This redefinition allows for identifying a much broader array of harms as violence and to consider social structures, rather than intentionally acting human agents, to be at its root. Spivak's (1988, p. 76) notion of "epistemic violence" similarly ascribes violence not to individual perpetrators, but to social formations, in this case, colonialism. The latter fostered dominant modes of knowing and the concomitant erasure of others, as exemplified by the variegated efforts and means to silence the colonial subject. An important way to achieve this silencing is discursive mechanisms of Othering, which some have proposed to label "discursive violence" (Jones et al., 1997, p.394).

These expansive approaches to violence found early resonance in the field of political ecology. A key example is Watts's (1983) groundbreaking *Silent Violence*. This term indicates "a structural relationship between famine and the political economy of colonialism that legitimately warrants the use of the term 'violence'" (1983, p.xxiv). Nixon (2011), for his part, further extends the notion of structural violence to "slow violence", to capture the often invisible attritional lethality of environmental crises, and draw attention to the variegated temporalities of violence. In recent years, the discussion on violence in conservation areas has similarly embraced broader conceptualizations of violence. Following Peluso and Watts's (2001)

rendering of the notion, Büscher and Ramutsindela adopt an expansive interpretation of "green violence", emphasizing that it encompasses the "material and nonmaterial aspects of violence and the ways in which violence takes social and linguistic form" (2016, p.10). While political ecology has therefore provided an important impetus to the conceptual development and analysis of indirect forms of violence, it has lagged behind on the study of direct physical violence (Watts & Peet, 2004).

The field of political geography has over the past two decades similarly gravitated towards expansive definitions of violence, continuing earlier discussions on structural violence and its geographies (Johnston, O'Loughlin & Taylor, 1987; O' Thuathail, 1987). Certainly, there is a long tradition of political-geographic work focusing on direct physical violence in both urban and rural settings. This work examines, for instance, the spatial distribution of violence and how it is shaped by place-specific characteristics (e.g. Adams, 1972; Herbert, 1982; Raleigh & Hegre, 2009). It mostly consists of large-*n* type studies that look more at correlations than at the causes of direct physical violence (McIlwaine, 1999), and are therefore often labelled "empiricist" (O' Thuathail, 1987; Tyner & Inwood, 2014). Moreover, as demonstrated by Korf (2011), part of this work is based on problematic, often rational actor-based assumptions regarding the drivers of human agency.

A more recent, smaller strand of work in political geography departs from this tradition by studying the production of direct physical violence in a qualitative manner. These studies examine how transformations in technologies of warfare and surveillance impact the production of violence (Shaw, 2013; Wall, 2016). Gregory, for instance, analyzes how these changes affect the role of time-space and visibility in the "kill chain", which he defines as "a dispersed and distributed apparatus, a congeries of actors, objects, practices, discourses and affects, that entrains the people who are made part of it and constitutes them as particular kinds of subjects" (2011, p. 196). Not all of these works, however, theorize the implications of these technological developments for the nature of violence itself.

Where the focus is explicitly on theorizing violence, scholars in both political geography and political ecology tend to emphasize that studying direct physical violence is not only reductionist, but also harmful, for various reasons. First, an analytical focus on immediate, visible manifestations and moments of violence would lead to obscuring the broader and deeper socio-economic, political and discursive forces that are its root or that kill, harm and unsettle people in their own right (Büscher & Fletcher, 2018; Nixon, 2011; Springer, 2011). Second, a broader conceptualization of violence, including a focus on 'letting die' rather than 'killing/making die', allows for a redistribution of responsibility: rather than individual perpetrators, those sustaining particular social structures and inequalities become collectively responsible for violence (Davies, 2018; Tyner & Inwood, 2014; Tyner & Rice, 2016). Third, taking a cue from Scheper-Hughes and Bourgois's notion that different forms of violence (e.g. everyday, epistemic, structural) are located on a "continuum" (2004, p.1), a focus on direct physical violence would suggest that it can be isolated from other forms of violence. However, different violences are held to be mutually constitutive or to relate to one another in a dialectical fashion (Büscher & Ramutsindela, 2016; Laurie & Shaw, 2018; Loyd, 2009; Pain, 2014a;

Springer & LeBillon, 2016). As Tyner and Inwood put it, the difference between direct and structural violence is a "false dichotomy" (2014, p.779).

The tendency to question typologies of violence appears to run counter to approaches to power in political geography and political ecology. For instance, Foucauldian distinctions between 'sovereign', 'disciplinary' and bio-power have been widely adopted (Crampton & Elden, 2007; Svarstad. Benjaminsen & Overå, 2018). Furthermore, in an influential account of topographies of power, Allen (2003) identifies different modalities of power, such as domination, coercion, persuasion, seduction, and manipulation, which tend to interact within particular arrangements of power. These categorizations of power pay specific attention to the difference that presence and proximity make for the ways in which power is mediated relationally. Some forms of power, such as domination –which works through recognition–become stronger when there is direct presence. Others, however, such as manipulation – which requires concealment and indirectness– are more easily exercized from a distance. As further discussed below, these insights could also be applied to violence, suggesting that differentiating between various forms of violence will allow for a more precise analysis of the spatialities and temporalities of their respective production processes.

Conflating direct and indirect forms of violence also contradicts the trend in one particular strand of conflict studies to analytically disaggregate war, conflict, and direct physical violence. This strand departs from the premise that conflicts and war by no means automatically lead to violence. Rather, violence constitutes a distinct phenomenon that merits separate study, in particular, from a microdynamics perspective (Brass, 1997; Brubaker & Laitin, 1998; Kalyvas, 2006). Adopting such a perspective reveals that the ways in which we perceive and analyze violence are often shaped by predominant conflict narratives, such as rebels vs. government; Hutu vs. Tutsi; Hindu vs. Muslim, and so on. However, when looking closely at specific incidents of violence, many are un- or only weakly related to these dominant narratives. Rather, they are to a large extent shaped by other, often more private or local disputes and animosities (Brass, 1997; Kalyvas, 2006). By framing local and personal disputes in the language of the dominant conflict narrative, for instance, by denouncing one's personal rival as an "enemy collaborator", people create justifications to harm their opponents. These framings often become dominant in the post-hoc coding of violence, thus obscuring certain of its drivers (Kalyvas, 2006).

Another aspect of microdynamics approaches is the study of how violence, in particular that against civilians, is produced within armed organizations. Osiel (1999, pp.187–188) distinguishes between 1) "atrocities from above", which are explicitly ordered by commanders; 2) "atrocities by connivance", where the hierarchy has not given explicit orders, but creates a permissive climate by not punishing acts of abuse; and 3) "atrocities from below", which result from soldiers' own volition, hence are neither ordered nor tolerated by the hierarchy. To identify where acts of violence fall on this ideal-typical spectrum, researchers commonly examine factors highlighted in military-sociological research. These factors include: command and control, professional and informal norms and identities, norm-enforcement mechanisms, and discipline and cohesion in fighting units (for an overview, see King, 2013). This line of research posits, for

instance, that the dissolution of the discourse and imagery of "civilians" and their subsequent assimilation with "the enemy" open the door to abuses, specifically when the norms pertaining to treating civilians are no longer enforced (Slim, 2008). This example shows how a microdynamics approach may integrate discursive mechanisms of Othering, or in other words, discursive violence, into the analysis. It thus illustrates how such an approach can help trace the ways in which other forms of violence come to feed into the kill chain of direct physical violence.

Green violence, green militarization and microdynamics approaches

Echoing broader trends in political ecology and political geography, the insights from microdynamics approaches have been incorporated only to a limited extent within studies of "green violence" and "green militarization". This last term refers to the increasing deployment of military strategies, technology and logics in the conservation domain (Lunstrum, 2014). This work foregrounds two general characteristics of the multiple forms of violence encountered in militarized protected areas. First, they are shaped by vast power asymmetries. Conservation actors, which generally include paramilitary ranger bodies and other state actors, commonly have superior means to wield violence (Peluso, 1993; Peluso & Vandergeest, 2011). These asymmetries become even stronger where national conservation actors are supported by transnational networks of aid donors and non-governmental organizations (NGOs), as occurs in large parts of the Global South. These networks finance increasingly sophisticated arms, equipment, and surveillance systems for rangers, as well as their training, which often involves foreign military instructors and private security companies (Duffy, 2014; 2016; Duffy et al. 2019; Humphreys & Smith, 2014; Massé, 2018). A second characteristic of violence in areas subject to green militarization, which is again more pronounced where there are high levels of transnational involvement, is the "politics of (in)visibility" (Massé, 2019) surrounding its exercise. Different groups strive to render certain forms of violence (for instance, against charismatic mega-species) highly visible, while obscuring others (such as violence against "poachers" and indigenous peoples) (Marijnen & Verweijen, 2016; Neumann, 2004). Given that the (in)visibility of violence directly affects the substantial funding flows to protected areas, the stakes of studying violence in these areas are high (Büscher & Ramutsindela, 2016; Marijnen & Verweijen, 2016; Massé, 2019). As the following section demonstrates, limited engagement with microdynamics approaches results in ambiguities about the constitution and workings of the kill chain. This in turn, may negatively affect an understanding of the distribution and exercise of agency within the kill chain, and how this chain is constituted in time and space.

Ambiguities surrounding the kill chain

Most studies of green militarization and green violence do not work with very precise conceptual tools to analyze the production of direct physical violence. For instance, Büscher and Ramutsindela define green violence as violence deployed "towards the protection of nature and nature-conservation related ideas and aspirations" (2016, p.10). Yet, it remains somewhat unclear to what extent and in what ways violence needs to be related to nature conservation in order to count as "green". To paraphrase Brubaker and Laitin's reflection on ethnic violence

(1998, p.427): how does the adjective "green" modify the noun "violence"? Does this labeling suggest a causal relation, and if so, what criteria are used for assessing whether violence is "green" or not?

Within protected areas, there may be an array of violence that is not directly related to conservation or environmental conflict. For instance, in the entity of Binza adjacent to Virunga National Park, kidnappings are endemic. These kidnappings are carried out by armed groups and bands, with the help of civilian collaborators. A substantial part of the perpetrators and their collaborators are young, impoverished men who have limited prospects of obtaining land to cultivate, or earn their livelihood in another way. At the same time, the presence of the park bars them from access to many acres of fertile land (Verweijen & Marijnen, 2018). While there is thus an indirect conservation-related dimension to this violence, armed actors in other parts of the park with similar pressures on land have not resorted to kidnappings. At the same time, kidnappings also occur in areas of eastern DRC without protected areas (Hendriks & Büscher, 2019). Violence enacted by rangers is not always directly related to conservation objectives either. For instance, during fieldwork in 2011, I was told how a ranger of the hunting domain of Lwama (located between South Kivu and Maniema provinces) had intimidated a male inhabitant of an adjacent village at the instigation of the village chief. Apparently, this inhabitant was embroiled in a long-running conflict with the chief, as he had supported his contestant during an intense succession struggle that unfolded after the previous chief died.[1] The fact that this violent act may not qualify as "green" implies that violence by conservation actors must always be carefully studied before it can be adequately labeled.

The need for empirical investigations of the microdynamics of violence also becomes apparent when analyzing certain accounts of the discourses legitimizing direct physical violence against wildlife offenders. For Neumann (2004), the discourses that authorize "shoot on sight" and "shoot to kill" orders are linked to ideologies of race, gender, and the family; tropes of neo-Malthusianism and African barbarism; "just war" thinking; and the anthropomorphization of wildlife. He concludes that "through these discursive constructions in combination with the designation of parks as war zones, deadly violence against humans, not in the self-defense of human life, but in the defense of 'biodiversity', is normalized" (2004, p.834).

Yet Neumann builds his argument on examples of discourses articulated in memoirs of white conservationists, communications of international conservation NGOs, and Western media, such as National Geographic. He does not empirically demonstrate how these discourses inform the behavior of those enacting the described killings: African park guards and other law enforcement officers, many of whom are black. This is problematic as we cannot assume that the discourses and norms circulating among these African officials are exactly the same as those of white and Western conservationists, which would imply denying them any agency. Indeed, several studies indicate that African conservation officials do not always share, or at least not to the same extent, the discourses that are prevalent among Western actors (Annecke & Masubelele, 2016; Moreto, Brunson & Braga, 2015). As observed by Lunstrum in relation to

[1] Interviews with four inhabitants of Kasanga, December 2011.

rangers in Kruger National Park: "diverging from much of the official discourse denigrating poachers, they often hold in high regard the impressive tracking abilities of poachers and are sympathetic to why someone living in poverty would be drawn to poaching" (2014, p. 828).

Microdynamics approaches to green militarization

Breaking with the trends in the study of violence described above, a small, but growing body of work provides detailed, empirically substantiated analyses of the processes, practices and effects of green militarization and green violence. Most of this work focuses on those enacting direct physical violence in conservation areas, namely, rangers (Annecke & Masubelele, 2016; Massé, 2018, 2019). These micro-level studies indicate that the dynamics inside ranger organizations are crucial for understanding to what extent and how discourses, laws and policies that are often heavily shaped by transnational actors translate into violent practices. In particular, they show that the policies and discourses propagated by hierarchies are not always integrally copied by rank-and-file rangers. For instance, Moreto, Brunson & Braga (2015) find that rangers may act according to different moral considerations (such as granting villagers access to protected areas to gather firewood) than those enshrined in official regulations (see also Vasan, 2002). Massé (2019), for his part, observes how informal norms and related peer and command pressure among rangers in Mozambique prompt them to take a tougher stance towards poachers than is enshrined in legislation, with deadly consequences. He also finds that part of rangers' motivation to kill poachers is related to the deficient judicial system of Mozambique, causing those who are caught to be often released soon.

Lombard's (2015, 2016) detailed observations of threat economies in conservation areas in Central African Republic (CAR) similarly bear out the dangers of overemphasizing dominant storylines in the analysis of conflict and violence. She contends that grand narratives of green militarization, such as it being primarily driven by neoliberalism or biopolitical objectives, cannot readily be substantiated in the case of CAR. As she observes:

> In each of these accounts, the use of force has a clear meaning and function and is used by a particular group of people or interests for broad or overarching goals of control, which are linked to processes of economic gain, capitalist transformation, and/or biological conservation, or resistance to these things. Instead, the armed enforcement of protected areas in CAR shows that people –whether putatively working for or against these projects – are more interested in locating privileged means to an income, success in which confers status if not always respect (Lombard, 2016, p. 218).

Taken together, these studies complicate the idea of green militarization as being uniquely driven by particular (largely Western) grand narratives and imperatives that would translate in a relatively straightforward manner into increased violence "on the ground". Rather, they indicate that the ways in which these narratives and imperatives come to inform violence are shaped by many intermediary factors in the kill chain pertaining to the national and subnational scales – such as group dynamics, informal norms among rangers, and the workings of the judiciary. The

importance of these intermediary factors is further born out by the study of direct physical violence committed by rangers in Virunga National Park.

Methods

To understand the production processes of direct physical violence in Virunga National Park, I conducted focus groups and interviews, in Swahili and French, in eleven villages around the park in 2019, together with Saidi Kubuya, Janvier Murairi and Evariste Mahamba.[2] Field data were complemented by and triangulated with news articles, United Nations reports and press releases and reports from Congolese human rights organizations. The focus groups, with eight participants per group being either all men or all women, were mostly conducted with farmers, fishermen, and petty traders. Individual and group interviews were held with local leaders, representatives of NGOs operating in the sphere of human rights and the environment, members of the security services and the judicial apparatus, and current and former employees of the park. In total, we contacted 320 people.

During the interviews, farmers expressed fears about being arrested and beaten by park guards; women entering the park to search for fire and construction wood worried about being raped by armed actors; and those travelling certain roads next to the park were afraid to get ambushed or kidnapped for ransom (Verweijen et al., forthcoming). These encountered fears and worries led to the conclusion that it was pertinent to study direct physical violence in this area. Furthermore, the field research indicated that acts of direct physical violence, such as murder, torture, and rape, were clearly seen and labelled as "violence". In fact, our interlocutors identified these acts more readily as violence than indirect forms. As many scholars have pointed out, what social phenomena we recognize as constituting violence is contextual and shaped by power relations (Loyd, 2009; Mitchell, 1996; Scheper-Hughes & Bourgois, 2004). Therefore, as a white, Western academic in the Global South, it was necessary to carefully establish what social acts or phenomena were intersubjectively constructed and interpreted as "violence" within the research context.

Violence by rangers in Virunga National Park

Similar to other areas in eastern DRC, Virunga National Park and its surroundings are home to a staggering amount of direct physical violence against civilians, seen here as actors that are unarmed and not full-time members of a fighting group (Kalyvas, 2006, p.19). This violence is mostly enacted by armed groups, bandits, the national armed forces (FARDC), and rangers of the Congolese organization for nature conservation (ICCN). The latter are responsible for only a comparatively small part of the total amount of violence. Yet violence by rangers has an important impact on general dynamics of conflict and violence in the park area, in part as it pushes people to collaborate with armed groups (Verweijen & Marijnen, 2018). Furthermore,

[2] When referring to interview data, the names of certain villages are withheld, and interview dates only indicate the month, to protect informants' identities.

due to the high level of transnationalization of Virunga's management and funding, it is precisely this violence that is strongly characterized by the two features of violence in militarized conservation areas highlighted above: power asymmetries and the politics of (in)visibility. These features render a microdynamics approach to direct physical violence all the more important, since they risk clouding the kill chain.

Situations of violence

From the field research, it emerged that ICCN rangers engage in direct physical violence against civilians in a number of situations: first, when apprehending people trespassing on the park to cultivate, gather wood, produce charcoal, or fish; second, in the course of everyday situations of cohabitation with civilians; third, during crowd control activities; fourth, when encountering perceived enemy forces in the course of patrols; and fifth, during operations– often conducted in collaboration with the Congolese army– to dismantle illegal settlements.

The far-out majority of the population in the Virunga area, with the exception of fishing communities near Lake Edward, depend for their livelihood on small-scale farming. For a variety of reasons–including a lack of access to arable land, historical grievances related to land dispossession for the park's creation, and disagreement on the park's boundaries– people cultivate in areas that the park considers to be located on its territory. Others enter the park in an unauthorized manner to collect firewood and branches, produce charcoal or fish (Verweijen & Marijnen, 2018). This is not without dangers. Those cultivating or gathering resources in the park are often surprised and apprehended by rangers on foot patrol, and are subsequently thrown into the rangers' trucks and transported to their bases.

In many focus groups, we gathered consistent testimonies about abuses in the course of these apprehensions–allegations that the park denies.[3] People reported being beaten very hard, sometimes on their legs, and then being forced to carry their harvest over a long distance. As one man testified: "On 23 December 2017, when I was producing charcoal in the park, I was arrested by park guards …They tied our hands and they beat us hard with the butt of their rifle and with sticks. After four days of detention in Rumangabo, they transported us to the prosecutor's office in Rutshuru. In the vehicle, we were lying down and the park guards sat on top of us and trampled on us".[4] Women reported being humiliated in specifically gendered ways. In Mujoga, a youth leader said: "Women are undressed before they are whipped… We saw one woman who was so afraid that she had to pee".[5] In what seem to be rare cases, those trying to flee the park guards are shot. This occurred to a farmer working on his field in the morning of 27 November 2015. When a patrol of three park guards and one FARDC soldier tried to apprehend him and his two colleagues, he fled and was shot by what eyewitnesses claim was the ranger leading the patrol. His corpse was later found riddled with bullets.[6]

[3] Interview with park spokesperson, Goma, January 2019.
[4] Interview, January 2019.
[5] Group interview with youth leaders, Mujoga, January 2019.
[6] Focus group with female inhabitants, January 2019; interview with widow, January 2019; interview with two eyewitnesses and lawyer, October 2019.

Direct physical violence is accompanied by what people experience as intimidation and acts to deprive them of food and income. Patrols are strategically planned around harvest time, so as to expropriate and destroy people's harvest, including by burning their fields. Charcoal is similarly confiscated and destroyed. Rangers also dispossess those allegedly cultivating in the park of their tools, such as machetes and hoes, and sometimes their bicycles. While the park does not impose fines (although it is reported to ask those apprehended for money for transport), arrestees have to pay hefty fines and non-official fees to justice officials. In addition, when in prison, they are unable to generate income and generally have to pay in order be kept in livable conditions and get sufficient food. Individuals sent to military justice often bear an even heavier burden, given that they tend to be kept in detention longer. As a military prosecutor explained: "It is the policy of the ICCN to send environmental crimes to military prosecutors, because they have exorbitant powers and can keep those accused up to twelve months in detention [without presenting them before a judge]".[7] For a substantial amount of cases we analyzed, there were no clear indications that the accused bore firearms or were armed group members, rendering it unclear why they were sent to the military, rather than the civilian prosecutor's office. Human rights defenders were highly critical of this practice, considering it intimidation tactics.[8]

Gendered violence also occurs in everyday situations of cohabitation between rangers–96% of whom are male– and the population. In one village, we heard the story of a girl who was only 12 years old when she gave birth to a child fathered by a ranger. Just when the family tried to negotiate with him to contribute financially to the child's upbringing, he was rotated elsewhere.[9] In June 2019, on behalf of the victim, a law firm filed a complaint against the park's deputy director and chief warden of the southern sector, charging him with two crimes. The first was the repeated rape of the victim in the ranger compound of the park's headquarters in Rumangabo since she was 15 years old, leading her to conceive a child. The second was attempted murder, as he shot at her when she was talking to another ranger near the entrance of the compound in May 2019, lodging two bullets in her leg (CIDDHOPE, 2019).[10]

Another situation in which rangers commit violence against civilians is when they are confronted with protesters. On 29 September 2014, around 10am, a crowd of local youth had gathered in Rumangabo before the park's headquarters, to protest the ICCN's recruitment policies. They were dispersed by a ranger who shot live rounds into the crowd, wounding a number of youngsters (BCNUDH, 2014a). One of them later died from his wounds.[11] A similar incident occurred on 5 December 2016 in Buhumba, when a group of day laborers working for the park on an electrification project had gathered to claim their pay. To break up the crowd, a ranger fired live rounds at them, shooting one man in the leg (BCNUDH, 2016).

[7] Interview with military prosecutor, January 2019.
[8] Interview with human rights defenders, Goma, January 2019 and March 2019; and Kiwanja, January 2019.
[9] Interview with relative of victim, January 2019; interview with victim and relatives, September 2019.
[10] Cabinet Kalinda avocats, N° 037/CAB/KAL/SM/D1001/19, Plainte à charge de Monsieur le Conservateur Mburanumwe Nzabonimpa Innocent, 10 June 2019.
[11] Interviews with eyewitness, youth leader and human rights defender, October 2019.

Deadly violence against civilians also occurs when rangers encounter enemy forces during patrols. On 8 December 2014, in the Ndwali area, at least 11 people were killed by a coalition of FARDC soldiers and ICCN rangers during hostilities with an armed group (BCNUDH, 2014b). On 20 December 2017, the Quick Reaction Force (QRF, a ranger unit that is more heavily armed) based in Kyangiro conducted a routine patrol on Lake Edward. They met a boat with armed militiamen, who started shooting at them, and then returned fire in such a way that all seven people in the boat died. The findings of a human rights fact-finding mission indicated that five of the people who died were not militia members, but civilians, evoking the question whether the used violence was not disproportionate.[12]

Killings of civilians further take place in the course of operations to shut down illegal settlements in the park, which are often conducted jointly with the Congolese army. Many of these settlements are protected by armed groups, which impose fees on the inhabitants in exchange for preventing the village from being closed down. Therefore, soldiers and rangers tend to go in prepared for armed fighting. These operations commonly include burning down all houses, confiscating and destroying belongings and harvest, and setting fire to the fields, to drive out the inhabitants. A joint investigation team led by the United Nations Mission in the DRC documented a series of abuses that had taken place during forced evictions in Ndwali between December 2010 and January 2011, including four cases of summary execution and numerous cases of rape, torture, forced labor, arbitrary arrests, and illegal detention (Report of the Secretary-General, 2013).

Dynamics of violence

The analysis of the microdynamics of direct physical violence by rangers in Virunga reveals that this violence is driven by a number of proximate factors. These relate to the following, overlapping categories: first, rangers' training; second, their formal and informal discourses and norms; and third, accountability mechanisms.

Rangers' training underwent significant changes after 2005, when what is today called the Virunga Foundation, a British-registered NGO, became involved in the day-to-day management of the park through a public-private partnership with the ICCN. Through this partnership, the Virunga Foundation's Belgian director became the park's chief warden in 2008. One of the new management's top priorities was reform of the park guard service. It recruited new, younger rangers, and provided them with a training that puts a stronger emphasis on military-style skills, such as combat tactics. It also armed ranger units more heavily, including with Rocket Propelled Grenade launchers and machine guns, and created the QRF. In addition, rangers were instructed to adopt a more robust stance towards offenders (Marijnen, 2017; Verweijen & Marijnen, 2018). According to people we interviewed, these policy changes have deteriorated rangers' behavior towards the population. As a woman in Kibumba said: "In the past, they [park guards] were very soft, today they are very fierce [*mkali*], they are no longer park guards, they are soldiers

[12] Interview with member of United Nations Joint Human Rights Bureau in the DRC, March 2019.

[*baaskari*]".[13] Similarly, in Vitshumbi, women commented: "The park guards don't know how to talk to people anymore, they behave purely like soldiers [*kisoldat tu*]. Their conservation is a conservation of the Belgian [colonial] era."[14]

While the rangers have a diverse curriculum that includes human rights training and law enforcement skills, regular human rights incidents cast doubt on its adequacy. Indeed, well-informed observers believe that training in human rights and International Humanitarian Law (IHL) is not sufficient. [15] Moreover, the emphasis on endurance, battle zone tactics and physical fitness may foster a "warrior culture" in which a premium is put on toughness and combativeness, rather than restraint and understanding (see also McClanahan & Wall, 2016; Massé, 2019). The fact that much of the training is provided by former, mostly Belgian, commandos, could also contribute to this outcome, as commandos are a type of infantry forces trained for overt combat and to conduct raids on unconventional targets. Furthermore, shooting live rounds at protestors testifies to a lack of training in de-escalating forms of crowd control that avoid casualties. Similarly, the brutal handling of people that try to flee or protest during apprehensions raises questions about the adequacy of training in basic law enforcement tasks.

Together with many others factors, such as socialization processes prior to entering the ranger organization (cf. Wood, 2018), training also affects the ways in which park guards view and speak of the population. These discourses on civilians appear to be largely negative. Informants stated that rangers consider the population to be "enemies of the park" and take them for worthless beings. One woman testified: "They chased us from our fields and said that the trees in the park were of more value than us".[16] Another often-heard statement was: "They [rangers] have higher esteem for wildlife than for human beings".[17] Some people also believed the park guards "despise them" [*banatuzarau*] and feel superior "due to them having arms, while we have nothing".[18] Others ascribed this superiority complex to the rangers being very well paid and supported by foreign donors, causing them to feel untouchable. As one official put it: "their laws appear superior to Congolese laws".[19]

Discourses on civilians are closely related to norms, and therefore shape armed actors' behavior towards civilians (Slim, 2008). The cases of rape of minors described above, including by a commanding officer, indicate that informal norms in the ranger organization may authorize such behavior. This would be consistent with norms found in particular segments of Congolese society at large, which emphasize men's entitlement to sex (Lwambo, 2013) as well as the behavior of other armed actors across eastern DRC (Elbert et al., 2013). Such societal norms, which are modified by forms of socialization specific to armed organizations, may lead to what

[13] Focus group with female inhabitants, Kibumba, January 2019.
[14] Focus group with female inhabitants, Vitshumbi, January 2019.
[15] Interview with human rights defenders, Goma, January and March 2019; written correspondence with IHL specialist, January 2019; interview with former park employee, Goma, March 2019.
[16] Focus group with female inhabitants, Mujoga, January 2019.
[17] Focus group with male inhabitants, Katwa, January 2019.
[18] Interview with local leaders, Kibumba, January 2019.
[19] Interview with Congolese official, Vitshumbi, January 2019.

Wood (2018) calls "rape as a practice". This implies rape is not a purposeful organizational policy, but driven "from below" and–to varying degrees– tolerated "from above".

Another aspect of discourses on civilians that importantly shapes behaviorial norms is to what extent civilians are seen as distinct from combatants–a distinction that is central to IHL (Slim, 2018). Differentiating civilians and combatants is not always easy in eastern DRC, as armed groups are spatially and socially proximate to civilians, being linked by family, social and economic ties (Verweijen, 2016). Consequently, rangers appear to occasionally assume that people in the Virunga area act as informants for or collaborators of armed groups, or are part of these groups themselves. As customary chiefs in Katwa testified: "They impute the population being 'FDLR' [a rebel group], or pro-FDLR. This is a way to justify their [ill] behavior." [20] Rangers themselves also indicated that they see villagers as armed group collaborators. As one of them deployed to a patrol post in an isolated area explained: "Our job is extremely stressful. We are close to rebels here and we get messages of intimidation by phone. And the people here collaborate with the rebels".[21]

The failure to distinguish between armed groups and civilians becomes particularly deadly in "messy" situations, when armed actors are present and have opened or expected to open fire. This often occurs when rangers encounter hostile armed actors during patrols or operations to dismantle settlements. These situations may prompt an overwhelming fire reaction that foregrounds properly assessing whether civilian casualties can be avoided. Disproportionate violence can also be unleashed by logics of revenge. Rangers are regularly targeted by armed groups, with over a 175 rangers having been killed over the past decade.[22] Casualties may provoke a desire for retaliation that leads to the dissolution of the civilian/combatant distinction (Slim, 2008). For instance, the above-mentioned incident in Ndwali in December 2014 followed an armed group ambush in which three park rangers were wounded and one got killed (BCNUDH, 2014b).

A final category of proximate factors that drive direct physical violence by rangers is the accountability climate, including whether cases of violence are reported and how such reports are handled. While the ranger organization generally investigates reported abuse–albeit in a little transparent manner–the fieldwork indicated that people often refrain from reporting. As a local journalist put it:

> When someone dies, we do not know how to follow up on the case, we just ask permission from the FARDC to take the corpse away. It's like they have killed an animal or fly, there is not even an investigation.[23]

The cited obstacles to reporting include: fear for such a powerful organization as the park; a lack of trust in Congolese justice institutions; and the fact that victims often committed an infraction themselves (by exploiting resources or cultivating in the park). Furthermore, women generally

[20] Interview with customary chiefs, Katwa, January 2019.
[21] Interview with ranger, January 2019.
[22] See https://virunga.org/alliance/rangers-project (last accessed on 04.01.2010).
[23] Interview with journalist, Nyamilima, January 2019.

hesitate to report on sexual violence due to shame and fear for being stigmatized (Verweijen et al., forthcoming). Underreporting implies that park guards are in many cases not punished, which perpetuates a climate in which abuses occur. Another factor that complicates accountability is the Congolese justice system, which is vulnerable to manipulation. While the park's deputy director, who was accused of child rape and attempted murder, was initially suspended and imprisoned, he allegedly made an arrangement with the family of the victim. Subsequently, he was liberated in secrecy and appointed by the ICCN to a function in another national park in eastern DRC.[24] This set a bad example for the ranger organization as a whole, giving off the impression that higher officers are untouchable, even for grave offenses.

The contours of the kill chain

Having developed a fine-grained understanding of the types of direct physical violence enacted by rangers in Virunga, and the proximate factors driving them, we can now appreciate what a microdynamics approach analytically brings to the table. Violence by rangers in Virunga can certainly be explained by aspects that are commonly highlighted in the literature on green militarization, such as a heavier emphasis on military skills within rangers' training curriculum, as well as discourses devaluing populations and assimilating them with insurgents (Lunstrum, 2014; Massé, 2019; Neumann, 2004). However, we can also identify factors that are not directly related to processes of green militarization. These factors include informal norms on women and certain aspects shaping the wider accountability climate, such as the workings of the Congolese justice system and inhibitions to report abuses related to gendered societal norms. These factors cannot be readily gleaned from the official discourses and policies of high-ranking conservation officials and their donors, but only become apparent when analyzing dynamics within the ranger organization and among populations living in conservation areas.

However, the fact that not all of the immediate factors at play are directly related to the park management and its transnational donors does not imply that these actors are not an integral part of the kill chain. As observed by Massé (2019), we cannot locate the responsibility for violence uniquely within the individual ranger, but should look at the broader structures of which rangers are part, and through which their behavior is regulated. The park's international management has made a number of choices on how to organize ranger training and deployment; on what discourses and norms it inculcates in rangers; and on how to organize accountability mechanisms. As we have seen, it is doubtful whether ranger training is optimized for avoiding civilian casualties. This training, as well as rangers' deployment, is heavily shaped by foreign actors. Similar to the park's chief warden, Virunga's security manager is a Belgian national. A former paracommando in the Belgian army, and reportedly still closely connected to Belgian defense circles, he has important influence on the overall security strategy and day-to-day operations of the park rangers.[25] He is assisted by a former member of the French armed forces,

[24]Written correspondence with ICCN official, August 2019 and human rights activist, August 2019.
[25] Interview with two ex-park employees, Goma, March 2019; and phone conversation with Belgian defense expert, April 2019.

who coordinates actions against armed groups and anti-poaching operations.[26] Via foreign managers and instructors, rangers are exposed to specific discourses and techniques that come to shape their practices, such as seeing biodiversity protection as a "war effort" that requires a tough stance towards offenders (Marijnen & Verweijen, 2018; Neumann, 2004). The accountability climate, too, is shaped by the management's policy choices. The park could, for instance, invest more in lowering the barriers to report human rights violations committed by rangers. While they opened a toll free number for people to report environmental offenses and abuses by rangers, our fieldwork indicates that this number remains largely unknown (Verweijen et al., forthcoming).

The transnational linkages of the kill chain are further thickened through the policies, programs and practices of the park's foreign donors. The US-based organization Virunga Fund Inc invested around USD 40 million in Virunga in 2016, of which nearly 5 million were spent on equipping, training and supporting rangers and facilitating their operations.[27] Certain members of its board also financially support well-known international human rights organizations that–despite having operated for years in the wider Virunga area–have never publicly commented on human rights violations by park personnel, including the case of grave abuse by the park's vice director. Employees from a local human rights organization that receives funding from a big international conservation NGO told that their management has an informal policy not to communicate publicly about abuses by rangers, as their donor does not appreciate that.[28] By influencing the practices of human rights organizations, donors have considerable influence on the accountability climate, which shapes rangers' incentive structures and therefore their propensity to engage in violence. The same applies to the European Union, which through its Directorate-General for International Cooperation and Development (DG DEVCO) is one of the park's biggest donors, and also invests significantly in the ranger service (Marijnen, 2017). A few months before the allegations against the park's vice director surfaced, the EU had awarded him the prestigious Schuman prize in the category 'Biodiversity, Climate and Energy'.[29] They have kept complete silence on the matter since, stating they cannot comment on cases on which there are ongoing judicial proceedings.[30] However, these proceedings seem to have vanished, and the suspect currently openly exercises a function in a different park.

The above analysis indicates that when focusing on vectors of socialization, training and accountability, the kill chain is not limited to the ranger organization and its management: rather, its contours may stretch into the civilian society of which rangers are part, as well as into the park's transnational support networks. How these elements shape the production process of violence depends in part on relations of proximity and distance. For instance, the co-presence of foreign trainers and instructors allows for a more direct impact than the succession of mediated relations by which donors affect the accountability climate. Yet distance and proximity are not

[26] See: https://www.linkedin.com/in/erik-saudan-562668152/ (last accessed on 07.01.2019).
[27] Form 990, Department of the Treasury, Internal Revenue Service, Return of Organization Exempt from Income Tax, 2016, OMB No 1545-0047.
[28] Interview with human rights activists, January 2019.
[29] See https://www.facebook.com/UEenRDC/posts/2424802884205436/ (last accessed on 07.01.2019).
[30] Written correspondence with DGDEVCO employees, November 2019.

the only factors of importance: the nature of the involved power relations also matters. A Western donor threatening to withdraw funding may have stronger effects on the accountability climate than a local chief trying to convince rangers to better behave through persuasion.

Aside from identifying its contours, a detailed examination of the kill chain also allows for establishing when, where and how direct physical violence intersects and interacts with other forms of violence. Given that reasons of space prohibit an extensive discussion of how this occurs in Virunga (see for a further elaboration, Marijnen & Verweijen, 2016; 2018; Vikanza, 2011; Verweijen & Marijnen, 2018), a number of insights will have to suffice to illustrate the point. Abuses of civilians by rangers are clearly facilitated by framings of people as worthless beings or insurgents. These forms of discursive violence, which produce the 'Othering' of particular groups, help legitimize direct physical violence, as they place certain categories of people outside the moral community (cf. Neumann, 2004). Both direct physical and discursive violence are also shaped by, and overlap with, gendered violence (Pain, 2014b). A clear example is undressing women in public before whipping them, adding dimensions of humiliation and shame. These forms of violence further interact with economic violence. By destroying harvests and charcoal and dispossessing farmers of their agricultural tools, rangers crush people's livelihoods as part of their efforts to protect biodiversity. These practices come on top of other forms of economic violence against smallholder farmers, which are, in a longer-term perspective, shaped by various types of colonial violence. This includes the very creation of Virunga (then Albert) National Park, which displaced thousands of people and dispossessed them from their ancestral lands (Vikanza, 2011). The resulting grievances are largely silenced through the marginalization of certain knowledges and modes of knowledge production, hence epistemic violence. The park has a predominantly top-down approach to management, engaging in limited consultation with local inhabitants (Verweijen et al., forthcoming). Moreover, the latter's voices are generally excluded from the park's communications and international media reporting on the park, and therefore remain largely unknown by its main donors (Marijnen & Verweijen, 2016). In this way, the power asymmetries that lead to the marginalization of the worldviews, knowledge and opinions of people living in the Virunga area render certain forms of violence against them invisible, thereby perpetuating the conditions in which such violence can occur.

Mapping the kill chain in militarized conservation areas

The example of Virunga National Park shows that studying the microdynamics of direct physical violence is indispensable for accurately grasping its kill chain, and the ways in which this chain is constituted in time and space. To examine this last dimension, we can take a cue from Allen's analysis of geographies of power and trace the "distinctive relations of proximity and reach" (Allen, 2003, p. 2) that mark the production process of violence. This requires identifying its proximate and dispersed constituents, and how they shape perpetrators' actions either directly or via a succession of mediated relations. In relation to direct physical violence by armed organizations, assessing these aspects necessitates an understanding of whether violence comes, in Osiel's (1999) terminology, "from above", "from below", or is produced "by

connivance".

Where violence comes "from below", the kill chain does not run up to headquarters level. This is especially the case where the armed actors involved were harnessed by civilians to wield violence, such as the ranger from the Lwama hunting domain harming someone at the behest of a village chief. In such situations, the kill chain encompasses particular civilians, who engage in the co-production of violence through co-presence, and imprint it with their conflicts, identities and discourses (Kalyvas, 2006). As a result, violence by rangers may become less directly or un-related to conservation objectives, therefore no longer qualifying as "green". The chances for this to occur are higher where rangers have considerable influence on tactical decision-making, which is often the case when they are deployed in isolated areas, are ill supervised and have weak connections to their hierarchy (Moreto, 2016; Ogunjinmi, Umunna & Ogunjinmi, 2008; Vasan, 2002).

Where violence results from a permissive climate, civilians' norms and discourses–for example, those on gender– generally still play a role, albeit more indirectly. These factors are mediated by dynamics internal to the armed organization, such as training, identification with commanders, and mechanisms of reward and punishment (Wood, 2018). As we have seen, many of these elements are shaped by actors outside the ranger organization, including transnational donors. To what extent and how these civilian and transnational influences come to matter is in part a function of the power relations into which they are embedded and the nature of their transmission. These aspects are also relevant for gauging the effects of the online diffusion of discourses legitimizing violence against poachers. As argued by Lunstrum (2017), what happens online potentially affects the practices of conservation actors offline, implying cyberspace can become a part of the kill chain (see also Büscher, 2016). However, while information and communication technologies (ICTs) enhance the directness of the exercise of power, they also lead to its dilution, as they "risk a more superficial and indeterminate mode of its application" (Allen, 2003, p.136). It is therefore crucial to empirically establish how and to what extent online discourses feed into violent practices.

Studying ICT channels is also pertinent when analyzing violence "from above", where the kill chain is largely concentrated in the (vertical) command chain, even though it continues to be shaped by diffuse elements. The relative salience of these elements depends in part on the characteristics of the command chain, including its strength, and the channels through and speed at which orders are transmitted. We cannot assume that orders to commit violence are automatically implemented. In this respect, Allen's (2003, p. 157) observations on the "authoritative centre view" of power are pertinent. This view leads to mistakenly judging power "by its *intended* rather than by its *actual* effects (2003, p. 157, italics in original), in part as the spread of power from the center outwards is assumed rather than evidenced. How and how effectively orders are diffused and followed differs profoundly between armed organizations, implying careful research is needed to identify the actual effects of policies and injunctions from the hierarchy. Rangers in low-tech organizations that are deployed in remote areas with limited means of transport and communication are connected to their headquarters through long chains of intermediaries (subordinate commanders). This commonly introduces a substantial amount of

discretion in the command chain, as these intermediaries will have to interpret orders and translate them into concrete measures (cf. Allen, 2003, p. 134). The ensuing succession of mediated relationships may also alter the basis on which orders are followed by subordinates. This occurs especially where orders, for instance to kill "poachers", become clothed in discourses that deviate from official narratives. In such cases, other forms of discursive violence start feeding into the kill chain, illustrating how a microdynamics approach helps establish more accurately how different forms of violence interact.

In higher-tech ranger organizations with advanced ICT and transport capabilities, there are fewer intermediaries and quicker transmission of orders, which reduces interpretational leeway. Especially where certain new visual technologies are used, this situation also leads to time-space compression within the kill chain. While this redefines the role of proximity, it does not obviate the importance of inter-personal bonds for killing (Gregory, 2011). Furthermore, the use of advanced technologies and modes of transport may extend the kill chain vertically (Shaw, 2016). Massé (2018) documents how this extension works in the conservation-security domain. He describes how drones, satellite and spotter planes are used to locate alleged conservation offenders, while rangers and security personnel are transported by helicopter to track down and "neutralize" suspects. These observations underscore the need to study the workings of ranger organizations as a whole, when trying to map the kill chain.

The difference that co-presence and proximity make for the ways in which power is mediated relationally implies that the topological landscapes of direct and indirect forms of violence are likely to vary–although the extent of this variation will depend on the types of violence at play, and the specific ways in which they co-constitute one another. As argued by Springer (2011), violence is an unfolding process that is mediated through and integrated within wider assemblages of space. Mapping the spatialities of its production process requires describing in detail how the relational effect named "violence" is produced through these assemblages, where its constitutive elements are located, and how the interplay between them is mediated in space and time. This analytical task may be facilitated by identifying different modalities of violence, based on the particularities of their workings and production processes, and how these are spatio-temporally constituted. These modalities may not necessarily correspond to categorizations of violence currently in use, which are not always based on the specificities of the type of violence concerned and the ways in which it is produced.

Conclusions

Substantial parts of the fields of political geography and political ecology posit that there is too much focus on direct physical violence and that such violence cannot be conceptualized and examined in isolation from other forms (e.g. Büscher & Ramutsindela, 2016; Loyd, 2009; Peluso & Watts, 2001; Tyner & Inwood, 2014). These trends have also affected studies of militarized conservation areas, only few of which empirically examine the production of direct physical violence in detail. Drawing on the case of Virunga National Park in eastern DRC, this article has demonstrated that studying the microdynamics of direct physical violence allows for uncovering factors shaping its production process that may remain invisible when taking grand

narratives and macro-level structures as analytical point of departure. Moreover, I have shown that a microdynamics approach does not necessarily lead to neglecting, obliterating or minimalizing the pertinence of broader histories and conditions of violence nor of forms of indirect violence. By contrast, this approach can serve as an entry point to tracing how such histories and conditions matter in the production of direct physical violence, and how this violence is shaped by and interacts with other types of violence (cf. Turpin & Kurtz, 1997).

By providing a lens for studying the composition and workings of the kill chain, a microdynamics approach also allows for agency to be more accurately located and analyzed. It shows, for instance, that the behavior of individual rangers is largely a product of the ranger organization, and the ways it organizes training, socialization and accountability. Moreover, a microdynamics approach can uncover how these dimensions are shaped by transnational actors, such as instructors, managers and donors. At the same time, it foregrounds the agency of people in the Global South, including how they challenge or instrumentalize discourses and injunctions emerging from the Global North. Contrary to what Springer (2011) alleges, studying direct physical violence in the Global South does not necessarily lead to reproducing Orientalist discourses. In fact, microdynamics approaches to such violence demonstrate that its production process is remarkably similar to that in the Global North, downplaying the influence of, for instance, "religious fanaticism" or "ethnicity" (Brass, 1997; Brubaker & Laitin, 1998). A more detailed picture of agency may also uncover space for resistance against violence. For instance, African rangers appear to harbor important doubts about the project of green militarization. While constrained by working in hierarchical organizations, this may contribute to their eventually challenging its implementation (Duffy et al., 2019). To paraphrase Lunstrum (2014, p. 828), it is here that the discourses underlying green militarization start to unravel.

Finally, this article has demonstrated that studying the microdynamics of direct physical violence is important for analyzing its geographies. A growing amount of literature on geographies of violence rejects "essentializing typologies" of violence (Tyner & Inwood, 2014, p. 771). This rejection risks either homogenizing violence, thereby obscuring the particularities of different violences and their respective spatial and temporal qualities (cf. Allen, 2003), or peculiarizing it. In the last case, each expression of violence becomes a product of highly unique relational assemblages, implying its geographies become idiosyncratic. This renders it seemingly futile to try to identify recurrent configurations of the spatialities and temporalities of its production process– which does not exclude acknowledging contextual variations. Assuming that different types of violence have sufficiently in common to warrant their inclusion in the same category, we may well expect their production processes to have certain recurring features, including in respect of how they are constituted in time and space. Capturing these variations as different modalities of violence may allow us to develop more precise spatial vocabularies of violence, and in this way, significantly advance the study of geographies of violence.

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