

ECOLOGY AND WAR: THE EXPERIENCE OF WORLD WAR I

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Conflict Landscapes of the Great War: The Spatial and Ecological Dimension of Military History* **

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The spatial and environmental dimension of WWI has recently taken the central place in academic debates on the military history of the “short twentieth century”. At present, the large-scale conflict of humanity and nature under totalized warfare is recognized as no less significant to the existential experience of combatants and civilians than actual battles. Functioning as a demiurge, the Great War created and re-molded landscapes, accelerated development trends shaped during the industrial era, triggered the construction and demolition of infrastructure, and determined the resource policy, economic practices, and language constructs of national communities during subsequent historical periods. Textual and visual narratives of the war feature the following three dimensions of the environment: a subject and adversary (sometimes even more dangerous than the real enemy); an object of destruction, invasion, and ordering; and an anthropological construct defining behavioral strategies and the memorial culture relating to the conflict. Modern researchers share a unanimous opinion that the pivotal role of the clash between humanity and the environment during WWI for subsequent historical development is paradoxically at odds with the degree to which the clash has been studied. This may be linked with the fact that the multidimensionality

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of militarized landscapes would require a research methodology incorporating elements of military history, ecology, anthropology, archaeology, geology (landscape studies), and cultural geography. Such a creative symbiosis has become possible only recently, owing to the adoption of the interdisciplinary approach by military historians. The gradual uptake of innovative study techniques has resulted in the uneven development of the spatial and environmental history of the First World War as a research field: at present, the best-studied locations are confined to the western front and, partly, the colonial periphery. This publication presents a review of the recent conceptual publications by authors developing this research avenue and seeks to identify the heuristic potential of the concepts “Anthropocene”, “belligerent landscapes”, “landscape biographies”, and “layered landscapes”, including their applicability to the history of the Eastern Front of the First World War.

Keywords: First World War, environmental history, military history, conflict landscapes

В центре исследовательских дебатов по изучению военной истории XX столетия оказалось пространственное и экологическое измерение Первой мировой войны. Масштабное противостояние человека и природы в условиях тотализации военных действий на сегодняшний день признается столь же значимым для экзистенциального опыта комбатантов и мирного населения, как и сами сражения. Выступая в роли демиурга, Великая война создавала и переформатировала ландшафты, ускорила заложенные в индустриальную эпоху тренды развития, провоцировала возведение и разрушение инфраструктуры, определила ресурсную политику, хозяйственные практики и языковые конструкции национальных сообществ в последующие эпохи. В текстовый и визуальный нарративы войны окружающая среда вошла в трех ипостасях: как субъект и противник; как объект уничтожения, покорения и упорядочивания; как антропологический конструкт, определяющий непосредственные поведенческие стратегии и мемориальную культуру. Ключевая роль столкновения человека и окружающей среды в эпоху войны для последующего развития парадоксально не соответствует степени изученности этого феномена в современности. Это связано с тем, что множественное измерение милитаризированных ландшафтов потребовало бы создания исследовательского инструментария на стыке военной истории, экологии, антропологии, археологии, геологии (ландшафтоведения) и культурной географии. Только недавно подобный симбиоз стал возможен благодаря проникновению междисциплинарного подхода в исследовательское направление военной истории. Постепенность утверждения новшеств на настоящий момент обусловила неравномерность развития исследовательского поля пространственной и экологической истории Первой мировой войны: в большей степени пока изучены соответствующие аспекты истории Западного фронта, и частично – колониальной периферии. Представленная статья посвящена обзору новейших концептуальных публикаций авторов, работающих в данном ключе, и выявлению эвристического потенциала понятий «антропоцен»,

«беллигеративные ландшафты», «биография ландшафтов», «многослойные ландшафты», в том числе применительно к истории Восточного фронта Первой мировой войны.

Ключевые слова: Первая мировая война, экологическая история, военная история, беллигеративные ландшафты

One of the most often-cited contemporaries and participants of the First World War, Fyodor Stepun gave the following account of the Russian army's catastrophic retreat from Galicia in 1915:

The retreat was extremely difficult... However, apart from the Austrians, we faced another two bitter enemies: a complete lack of management on the part of our commanders, and nature which had become enraged at us... As we were crossing the River San, an ice drift suddenly started, and the floes knocked down the flimsy bridge our cannon was crossing; one minute, and the people, the horses, the cannon, and the ammunition box tumbled into the water; the commotion was incredible. The River San is fast and deep...¹ [Степун, с. 37].

The anthropomorphization of the environment, the conflict of people and nature, the transformation of spaces by militarized economies and mobilized masses of people form a recurrent motif in writings on military strategy as well as in personal narratives and visual materials on the world's first industrial war. However, this research subject remained overlooked by historians until relatively recently, when it sparked heated debates around the heuristic potential and possible intersections of environmental history with the conceptions of spatial turn and interdisciplinary approaches of cultural geography, archaeology, and historical anthropology.

The thesis that warfare during WWI fused natural and anthropogenic landscapes into a new entity known as "war landscape" (Kriegslandschaft) was first postulated by Kurt Lewin, who had fought on both the Western and the Eastern fronts and taken part in the campaign in Austrian Galicia. In his article, published during WWI in *Angewandte Psychologie* (1917), Lewin emphasized the phenomenological nature of the war landscape as perceived, imagined, and "directional" (*gerichtet*) [Lewin]. According to Lewin, the areas near the frontline lived by their own laws: as the combatants moved from the rear towards the front, the position of the last friendly trench became for them an imaginary boundary with unknown and dangerous "nothing" lying beyond. However, the territory near the engagement area was also structured by the logic of war: it incorporated danger zones such as the villages kept under fire or the crossroads visible to the adversary. Under mobile warfare, danger zones consolidated to form a single space of mortal peril; in trench warfare, this space broke down into

¹ This quote has been translated from Russian by N. Magnes. The translator sought to convey the meaning of the original texts rather than their style.

separate islets of endangerment. The structure might vary depending on the combatants' branch of service or the actual situation of the battlefield.

When describing his experience on the Eastern Front, Lewin provides vivid examples of objectification or even materialization of this moveable boundary as perceived by combatants. The configuration of war landscapes could change instantaneously if a village previously perceived as a safe, "peaceful" space was suddenly shelled by the enemy before the witnesses could mentally transfer the location into a different imaginary category or find shelter. Lewin's analysis culminated in justifying the seizure by combatants of the property within the war spaces:

Everything that ends up in the battlefield zone belongs to the soldiers as their legitimate possession – not because the area has been captured or because the soldiers' conduct changes in frontline spaces, but rather because this property constitutes a derivative of the battle, a thing of combat which naturally falls into the hands of the soldier [Lewin, s. 447].

The first inquiry into landscape phenomenology undertaken by Lewin remained in oblivion for a long time; it was not until very recently that his article claimed the attentions of military historians, partly under the influence of the spatial turn in the humanities. In this publication, we proceed from the assumption that the interdisciplinary enrichment of history, geography, archaeology, and anthropology may potentially offer new insights into the reciprocal impact of war and nature, the existence of the environment as an object, subject and anthropological construct defining the emotional experience of the contemporaries, the memory of the first industrial war, and the long-term development trends set by WWI. A review of isolated conceptual publications through the lens of military history would make it possible to create a research matrix for an in-depth study of the First World War as a landmark event for modernization processes, a watershed moment in resource policy, a prototype of mega-projects involving the development of natural landscapes, and a precursor of environmental and technological disasters of "the short twentieth century" (E. Hobsbaum).

The environmental lens in modern military history

Environmental history methodology, which has been actively advanced in the recent years, regards the study of the natural world as a force engaged in the processes of creation and destruction rather than a simple backdrop for human activity [Нагорная, Голубинов]. Natural phenomena like the permanent or changing states of climate, the climatic zones and natural landscapes are foregrounded as factors molding the development of communities, as a phenomenon "and a circumstance that has shaped daily life, science, and culture" [Herzberg, Renner, Schierle, p. 6]. Simultaneously, the natural environment is placed among the key cultural and anthropological constructs encompassing ideas of landscapes

and wildlife, practices of exploitation of natural resources by humans, the conflict of nature and societies [Bruno; Brantz]. While accepting the unfeasibility of recreating the history of nature without human presence, environmental historians discriminate between “nature” and “environment”, acknowledging the intertwinement of “nature” with human history as a key factor: historical understanding transforms “nature” into “environment” [Лайус, с. 24]. The terms “environment” and “landscape” form another conceptually significant binary opposition which absorbs various combinations of objects and resources as well as diverse social practices associated with their use [Brantz]. Simo Laakkonen introduces another term, polemosphere (from the Greek name for the divine embodiment of war), which refers to “those aspects of the environment and society that have been affected by warfare” [Laakkonen, p. 15].

Researchers specializing in the environmental history of warfare agree that the Great War had a disproportionate impact on the environment and that this impact has largely been overlooked by historians [Мамин; Environmental Histories]. In his encyclopaedic article on the destruction of environmental systems during the First World War, Tait Keller points out that warfare transformed the environment on all fronts, rendering it the main casualty of WWI [Keller]. On the one hand, Keller is convinced that the Great War intensified the trends in environmental development which had emerged during nineteenth-century industrialization. On the other hand, the war accelerated the industrial transformation of ecosystems through the construction of railways and defense facilities, tunnels, and power plants as well as the development of sources of raw materials. Even though the post-war regeneration of the devastated landscapes proceeded incredibly fast, the author is more interested in long-term environmental effects on natural resource management practices used by governments and businesses. One of the most promising ideas of his study (which, however, requires further investigation) is the suggestion that the consequences for local ecosystems were the most catastrophic on the European periphery, in colonial and occupied territories. However, being an expert on the history of the Western Front, Keller fails to provide any substantial empirical evidence for this claim.

The past few years have witnessed several studies in environmental history which emphasize that combatants’ frontline experience during WWI, apart from cultural upheavals and the civilizational rupture, was determined by the conflict with the unfriendly nature. Drawing on the stories of German military experts in the Caucasus, Oliver Stein concludes that the most enduring challenges to everyday survival were not so much the battles, which were limited in time, as the unusual climatic, topographical, and infrastructural conditions and life-threatening diseases [Stein] spread through water, air, and the local population’s everyday practices. Daniel Brantz opts for an even more radical perspective on the problem by stressing that the WWI warfare brought about a “Schicksalsgemeinschaft”, or, literally, “community of fate” between people and nature, which is engendered by their drive towards mutual destruction [Brantz].

The concept “Anthropocene” has featured prominently in the recent discussions on environmental history. Borrowed from geochronology, this term denotes a geological period with a high extent of human activity which impacts on ecosystems to a varying degree. The term was first introduced by Paul Crutzen and the marine scientist Eugene F. Stroemer, who claimed in 2000 in a societies’ newsletter: “Considering. . . [the] major and still growing impacts of human activities on earth and atmosphere, and at all, including global, scales, it seems to us more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term ‘Anthropocene’ for the current geological epoch” [Crutzen, Stroemer, p. 17].

Biological agents and geological agents are two different concepts. Environmental history, as Crosby noted in 1995 [Crosby, p. 1185], has much to do with biology and geography but hardly on a geological scale. As Dipesh Chakrabarty remarked, Humans are biological agents but become geological agents only by inventing technologies “that are large enough to have an impact on the planet itself” [Chakrabarty, p. 207].

Since then, scholars are debating when the age of Anthropocene started. Crutzen, in his seminal *Geology of Mankind*, stated: “The Anthropocene could be said to have started in the latter part of the eighteenth century, when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane. This date also happens to coincide with James Watt’s design of the steam engine in 1784” [Crutzen, Stroemer, p. 23].

Scholars have further noticed that by the mid-twentieth century, man’s impact on nature (for example by pollution through nuclear tests, or climate change caused by industrial pollution) has disproportionately increased (hockey stick curve, see Steffen) [Planetary boundaries].

Technosphere is a sub-term emerging from the context of Anthropocene. In this perspective, as Haff notes, the technosphere, as an autonomous, dynamic, and global system represents a new stage in the development of the Earth. On the same level as the lithosphere, atmosphere, hydrosphere, and biosphere, it operates in accordance with physical principles. A set of rules, the so-called six rules by Haff, govern the relationship between the technosphere and humanity: inaccessibility, impotence, leadership and control, reciprocity, performance, and provision [Haff]. The Anthropocene working group defines the physical technosphere as the totality of the material output of all human output of all human endeavors, consisting of rural, urban, subterranean and aerosphere. The latter includes all strata that were deposited during the Anthropocene, notes Trischler [Trischler, Will, p. 87], in addition to anthropogenic sediments that were deposited without any discernible human influence during the period encompassing the Anthropocene. According to traditional classification, however, the most obvious parts of the physical technosphere, such as buildings or motor vehicles, are not part of it. The Anthropocene

working group concludes: "...the physical technosphere provides an alternative prism within which the Anthropocene phenomenon can be considered, that more clearly reflects its dynamic nature than does the chronostratigraphic Anthropocene Series" [Scale and Diversity of the Physical Technosphere, p. 18].

The linking of human and geo-history confronts the historical sciences with the challenge of breaking away from traditional linear temporalities. As H. Trischler and S. Will postulate: "Instead of narrating historical change on the horizontal level, the task is to develop non-linear narratives, which has been convincingly already demonstrated, and to locate history on the vertical level. While stratigraphers read the history of the earth in a vertical direction by analysing geological strata, geological strata to identify disruptive phases of planetary dimension, the historical sciences are required to develop layered models of historical temporality, to conceptualise stratified models of historical temporality. The flourishing research on memorial cultures and collective memory has pointed new ways in this direction" [Trischler, Will, p. 97].

However, when applying the concept to the context of warfare and military conflict, we think that instead of mid-century, already the Great War formed the point of departure (or no return) in terms of environmental change, as we argue in this paper.

This claim resonates well with the environmental-philosophical interpretation of human and military history by Peter Sloterdijk, who argues that "the age of catastrophes" started on 22 April 1915, the day of the gas attack at Ypres. According to Sloterdijk, this event manifested a new understanding of war: from that moment onwards, the target of military assault shifted from the body of the enemy to their environment, which had to be destroyed or rendered unlivable. Adopted as a state policy, this "atmoterror" regarded the environment as the principal adversary and used the technological design of the atmosphere to exterminate the enemy, environmentalizing the very essence of warfare [Слотердајк, c. 85–100]. Overall, Sloterdijk's vision of the twentieth century as a war on the biological vulnerabilities of human beings is relevant to the debate on the Anthropocene. Despite being open to criticism, both the concept of the Anthropocene and the concept of atmoterrorism offer a high heuristic potential for exploring the environmental consequences of the First World War.

Ann-Stoler has introduced the concept of "imperial debris" and ruination into the field by pointing on the observation that the history of the end of empire and conflict also entails moments of progress and development, which need to be studied, while other parts perceived as "modernization" might bring debris and ruination in terms of environmental change (for example in the field of infrastructure or knowledge, such as medicine) [Stoler]. Julia Laius claims that despite the Anthropocene being frequently associated with environmental crisis, not all researchers attempt to describe it "solely as a narrative of degradation"; rather, it is presented "as a complex,

often controversial history of destruction, renovation and a bilateral connection between the two” [Лайус, с. 24].

It appears that the new type of hostilities during the first industrial war as well as the subsequent fall of the empires intensified both the destructive and constructive interaction between people and nature, changing the geological and environmental characteristics of landscapes in Western, Central, and Eastern Europe. Further in-depth studies may be able to move the lower chronological limit of intensified anthropological impact on ecosystems from the middle to the beginning of the twentieth century.

Military history and the spatial turn

Contemporary studies following the spatial turn have identified three types of spaces: geographical, social, and mental. Crucial to understanding the potential for the historicization of spaces is the assertion that physical spaces, which appear stable and monolithic by definition, must in fact be perceived as fluid and dynamic [Lieb, Nübel]. Social spaces constructed by a shared framework of existence are filled with new social statuses, roles, and behavioral strategies. Works by Jorg Baberowski, Wolfgang Sofsky, and other researchers of Stalinism and Nazism refer to spaces of violence, or territories where individual social groups identified by ethnicity, class, or other characteristics were assigned the roles of victims, executioners, or onlookers. Additionally, these spaces became focal points for new survival strategies based on utmost coercion or avoidance thereof [Sofsky; Баберовски].

Mental spaces entail the creation of imaginary frameworks and continuity which impact behavioral practices of social groups and political communities. Jennifer Peeples uses the metaphor of “contaminated landscapes” [Peeples], which describes, on the one hand, the visible and tangible environmental aspect of pollution, and on the other, the negative signification of human impact on the environment in specific locations, which results from the dominant societal beliefs. Martin Pollack evokes the term “contaminated landscapes” (kontaminierte Landschaften) to refer to the phenomenon of memorial culture whereby the sites of mass murders are marked on the mental maps of a national or global community [Pollack]. One type of mental landscape, which serves as an epistemological strategy describing the interdependence of “place” and “memory”, of mythical narratives and space materiality while creating new meanings, is “memoryscape” [Браточкин, с. 42]. Memoryscapes shape and maintain hybrid identities of various social (ethnic) groups. In doing so, the same memoryscape may produce diametrically opposed self-representations (i.e. winner or victim).

The spatial turn is of special significance for military history research as the era of world wars had intense transformative impact on all three dimensions of space – physical, social, and mental. According to Christoph Nübel, spatial military history is preoccupied with three subject fields: first, the interconnection between armies, military engagement, and the geophysical space; second, pre-war spatial orders and their transformation

under military conflict; third, the perception and interpretation of spaces during and after the war. Naturally, the boundaries between these research fields are permeable [Nübel].

The use of the spatial approach in studies of combatants' military experiences means that the geographical space with its supposedly objective characteristics (flat, hilly, mountainous, or forested) is perceived by soldiers and officers through a certain horizon of expectations. The latter, in turn, determined the emotions and actions of servicemen in the new situation of the first industrial conflict in history. Attempts to maintain control over war spaces and bagatellize the threat of death manifested themselves during the First World War as the resignification of militarized landscapes on the Western Front by assigning names of London streets, squares, and cafes to trench lines [Saunders, 2021, p. 7]. Conversely, the structuring of the desert landscape by century-long traditions of Hajj predetermined the strategic rigidity of the Ottoman Empire, rendering Turkey powerless against Britain's technology-oriented and more mobile approach to hostilities in South Arabia [Winterburn, p. 159]. Lewin's claim that the perception of spaces during the war depends on branches of service finds its further development here: the duties of a cavalry soldier, artilleryman, infantryman, or staffer act as a lens shaping behavioral strategies, the perceptions of the environment and their subsequent reflection in written sources [Dornik].

Geology and archaeology of military landscapes

Drawing on archaeological research conducted on the territories of the former Western and Italian fronts of the First World War, Nicholas Saunders describes the wide-ranging multi-stage transformations of frontline territories over the four years of the First World War. Thus, agricultural landscapes, formerly a source of life-sustaining produce, became a factory of industrial death: the soils poisoned by gas attacks produced toxic trees which were used in winemaking. The secondary transformation of landscapes was started in the wake of the war for purposes of social construction. This statement may be illustrated by discussions surrounding the reconstruction of Ypres, which were dominated by two concepts: to preserve the ruins as evidence of the war event and hold them in memoriam of the dead or to recreate the devastated buildings to their pre-war splendor. Finally, Saunders links the modern transformation of landscapes with the increasing popularity of "battlefield tourism" [Saunders, 2018]. Saunders eventually defines: "a conflict landscape" as "a hybrid of the original geographical location, geological nature, the cultural landscape at the time of the military event, that event itself, and the various ways in which it lives on in memory and is physically reconfigured so that real worlds and memory worlds are brought into alignment" [Saunders, 2021, p. 6].

Saunders's studies rely on the concept of layered landscapes which was introduced by nineteenth-century geology to describe the stratigraphic position of sediments and to map landscape relics dating from various periods. In the 1970s, landscape archaeology and cultural geography

absorbed the anthropological concept “biography of things” which denotes the ability of the object to create and change its life story when being transferred from one owner to another. The label was applied to a new subject matter and correlated with the concept of layers, leading to the emergence of “biography of landscapes” [Kolen, Renes].

This term was introduced by Marvin Samuels in 1979. The author adapted and applied to landscapes the phenomenological concept of human life worlds, i.e. spaces where people and landscapes mutually produce and transform each other through continuous dialectic interaction. For Samuels, reconstructing landscape biographies was largely about identifying power relations, i.e. determining individuals and elites that impacted the characteristics of (urban) areas in different periods. For Michel de Certeau, on the contrary, the development of landscapes was an issue of agency: he saw landscapes as outcomes of a “bottom-up” production of life worlds, as a trace of continuous daily activities pursued by ordinary citizens [Renes].

Johannes Renes argued that our understanding of the First World War as a phenomenon could be made more productive by identifying several types of time-layers in compound landscapes: vertical (cultural layers in the usual geological and archaeological understanding of the term); horizontal (geographical, relating to river basins or soil type); palimpsest (traces of various historical periods present on the same stratum); intellectual (landscapes in art which visualize anthropological constructs); and layers of symbolic meaning (landscapes and objects which have changed their functions due to shifts in dominant discourses and historical narratives). The 1990s brought an understanding that layered landscapes did not constitute life-worlds for people only and encompassed animals as well as other organisms – a realization which sparked a boom in historical animal studies, which are now regarded as controversial [Handbook of Historical Animal Studies].

One example of compound and fluid landscapes are European world war cemeteries. According to Saunders, incompleteness became an essential characteristic of military burials at the time of the First World War. Body exhumation and transportation of remains from battlefields to collective places of rest, burials from later conflicts as well as installation of memorial plaques conferred a dynamic aspect to military cemeteries [Saunders, 2021, p. 27]. Inquiries by military-historical archaeologists confirm that formerly belligerent landscapes created by trench warfare on the Western Front continued to pose a threat for decades, both due to unexploded ordnance remaining in the area and to the contamination of the terrain (earth, trees, and water) by chemicals. Excavations of WWII fortification structures in Normandy resulted in the conclusion that archaeology makes it possible to distance oneself from national or party narratives and discover “the buried traces of a giant cycle of construction–destruction–reconstruction typical of twentieth-century war” [Carpentier et al., p. 272].

To a lesser extent, the potential of military archaeology is confirmed by recent archaeological excavations on the sites of mobile engagement on the

Eastern Front, particularly in Poland where warfare territories underwent demilitarization and recultivation during the German occupation before becoming focal points of subsequent conflicts. The poor preservation of memorial landscapes and the threat to the military legacy on the part of both “black diggers” and the local population have spawned numerous research and memorial projects implemented by Polish colleagues [Zalewska, Czarnecki, p. 79; Ланник, с. 360].

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War has accompanied humanity throughout its history and morphed into an anthropological constant. Paradoxically, armed conflicts, despite their destructive nature, may be assigned the status of a demiurge: hostilities, the movement of armies and the emergence of infrastructure at the front and in the rear produce rapid transformations in landscapes and ecosystems as well as in the languages used for the description of the related mass military experiences. The disruption of natural and cultural layers, technification, and militarization of ecosystems, the accumulation of human and animal remains, medical waste, feces and malodor in frontline spaces caused the witnesses to the wartime events to create new terminology which could effectively capture the shocking experience of the first industrial war. The inappropriateness of the existing language for combatants and witnesses to the historic events resulted in the emergence of alienated, dehumanized terms “no man’s land”, “empty space” (Raum) or “moonscape”, later also “scorched land”. The strong link of these definitions with the experiences of the Great War, some of which found expression in canonical photographs of Western Front landscapes became an inseparable part of cultural memory about the conflict.

The phenomenology of belligerent landscapes of the First World War makes it necessary to enhance our research lenses and methodology with approaches derived from environmental history and the spatial turn. It should be emphasized, however, that the ambiguous character of the environment, which existed as both an objective force and an anthropological construct, creates a research dilemma. On the one hand, it expands the subject matter of research as the environment absorbs any physical transformations caused by people as well as cultural beliefs and practices projected onto a given locality. In view of the above, landscape research, counter to the widespread beliefs about the permanence of inorganic nature, must be based on the assumption of their constant mutability. On the other hand, these changes are recorded in written or visual sources, the creation and interpretation of which result in the double subjectification of military experience. What happens to the environment is registered through the distorting lenses of human perception. The interdisciplinary approach blending the methodologies used in humanities and sciences may be able to compensate for this dilemma and open new perspectives on the military history of the Great War.

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