Mosasaurs

*Interactions between armies and ecosystems in the Meuse Region, 1250-1850*

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PART I: LANDSCAPES

2. Frontiers

INTRODUCTION

In 1893 Frederick Jackson Turner presented his seminal essay titled 'The Significance of the Frontier in American History', a theory that has had an enormous impact on the perception of the United States' environmental history. Crucial to Turner's reasoning is the association of the word frontier with the advance of civilisation, as opposed to 'wilderness', or uncontrolled nature. The popularity of this thesis lingers on to this very day, even though environmental historians such as William Cronon have demonstrated convincingly that no such thing as a primeval wilderness existed when immigrants of European descent settled on the continent and increasingly moved westwards.

Many different definitions of the term 'frontier' exist, but all acknowledge that it essentially refers to a boundary, a dividing line of some kind. Scholars have identified political-military as well as cultural, ideological or ecological frontiers, depending on their respective perspectives. These definitions are not necessarily mutually exclusive, but can cause unnecessary confusion if the word frontier is used as a simple synonym for related words (e.g. borderland, border). This is especially so since historical sources also employ a variety of terms to describe boundaries (limits, confines, poles), the different connotations of which are often difficult to grasp. Language differences make matters even worse. The word frontière in modern French has not the same meaning as frontier in English, for instance, because during the early modern period it became a common term to refer to political boundaries, regardless of their military or ecological significance.

The following chapter uses the original medieval meaning of the word frontière as its starting point, and defines it as a military boundary, a dividing line between ‘the self’ and ‘the other’, where the other is perceived as particularly threatening to the extent that warfare becomes a distinct possibility. The English word frontier derives from the French frontière, which in its turn originates in the Latin frons, a front(line) of an army or a house. It therefore implies a notion of linearity. The word frontière can be traced back to the early fourteenth

74 The essay was published in 1921 as the first chapter of Turner's book: The Frontier in American History.
75 Cronon, 'The Trouble with Wilderness'.
century, while its use in Spanish and Italian is even older (twelfth and thirteenth century respectively).\(^77\) It was not the only medieval term to refer to military-political boundaries, however, and contemporaries often used it alongside words such as 'limits', 'marches', and 'poles'.\(^78\) Henry VI of England for instance declared his intention in January 1427 to overcome the last French centres of resistance, strongholds, on the left bank of the Meuse River, located in Champagne, Thierache, Rethel (...), and their marches et frontières.\(^79\)

Because of its close association with enemy threats the concept of frontier is closely connected to the construction of territories and ultimately to processes of state formation. Any study of the territory concept has to take its history of violence and warfare into account, as Stuart Elden has argued, for the very word territory derives from Latin terrere, 'to frighten'. This analysis adopts Elden's interpretation of 'territory', which is that political entities use control over land to regulate the movements of people living on that land. In this way, it links the chapters of frontiers and policing to each another as two different aspects of territory formation.\(^80\)

The mentioning of strongholds is also hardly a coincidence, for fortifications constitute an essential aspect of the ways frontiers were actually managed or defended. In the interest of clarity, this part of the thesis analyses frontiers in a general way, and leaves the specific ecological influences of fortifications to the next chapter. Both frontiers and fortifications can be considered as 'militarized landscapes', a term coined by Peter Coates and his research group to describe landscapes modified by modern military organisations ('simultaneously material and cultural sites that have been fully or partially mobilized for military purposes').\(^81\)

Given the emphasis on premodern warfare and the complexity of the ecosystem concept, this study describes a militarized landscape as an ecological milieu in which interactions between armed forces and its physical features have become so encompassing that they can be considered as a defining characteristic. These exchanges not only comprise actual ecological influences, such as disruption or compaction of the soil, adding or removing vegetation, and changing the hydrography, but also include military perceptions of their environment. Militarized landscapes are prepared in a direct or indirect way for coping with the possibility of organized violence by armies, but they do not have to be actually engaged in

\(^{77}\) Berend, 'Medievalists', 66; Buresi, 'The Appearance of the Frontier Concept'; 82-85; Febvre, 'Frontière: le mot et la notion'.
\(^{78}\) Ellis, Defending English Ground, 65; Genicot, 'Ligne et zone', 31; Gouguenheim, 'Les frontières', 54-56; Irisigler, 'Der Einfluss politischer Grenzen', 11, 15; Lieberman, The Medieval March of Wales, 11-12.
\(^{79}\) Luce, Jeanne d’Arc à Domrémy, 203.
\(^{80}\) Elden, 'Land, Terrain, Territory', 801-807.
\(^{81}\) Coates, Cole and Pearson, 'Introduction', 1-18; Coates et al., 'Militarized Landscapes', 465-491; Pearson, 'Militarized Landscapes', 115-126.
armed conflict. Frontiers for instance can be studied as militarized landscapes because the risk of attack necessitates a more or less permanent military presence. This definition emphasizes that some landscapes can only be understood by taking the (potential) presence of armies into account. It does not imply that military perceptions always predominated.

The object of this chapter is to use the historical development of frontiers as militarized landscapes in the Meuse Region to explain the origin of military domains, which constitute a core element in current debates about military forces' 'environmental footprint'. It seeks to establish whether the idea of a frontier as a frontline against wilderness, or uncontrolled nature, has a medieval origin, and to what extent these medieval perceptions had a role in the establishment of the military training areas that still exist today. This chapter thus lays the basis for the argument that there is little modern or progressive about the ways current military forces interact with ecological systems.

The first section reflects on the symbolic, or ideological, function of the Meuse Region as a frontier. It starts by examining the agricultural roots of the frontier concept and more specifically the apparent antagonism between the notions of 'garden' and 'wilderness'. It then moves on to the ways armed forces perceived frontiers, before studying the symbolic and practical value of the Meuse River itself as a frontier. The second section makes the transition from frontier perception to actual frontier management. It considers three essential elements of frontier defence: fortifications, road networks, and landscape modifications related to sustaining military presence. The third section brings one specific aspect of this frontier management to the fore: military training. It stresses the importance of making distinctions between temporary and permanent training grounds, and clarifies the reasoning behind the creation of military domains.

2.1 CONSTRUCTING NATURAL FRONTIERS

2.1.1 An Agricultural Origin: Gardens and Wilderness

There is a general consensus that during the Middle Ages and Early Modern period boundaries, in general way, became more defined and tended to encompass larger entities. Whereas in the High Middle Ages many areas in the Meuse region were characterized by a multitude of jurisdictions and enclaves, some of which as small as individual villages or even hamlets, the nineteenth century is well known for the dominance of ‘nation states’ with large and clearly defined borders or frontiers. Given that boundaries were initially drawn between fairly small entities and tended to become larger over time, it comes as no surprise that boundary markers first developed at the local level became essential elements in processes of state formation. The brooks, ditches, hedges, isolated trees, and boundary stones that marked
the limits between villages were eventually replaced by ‘natural frontiers’, the mountains, rivers, and forests that, in an ideal situation, separated (nation) states. The fifth line of the German national anthem clearly states that Germany should extend Von der Maas bis an die Memel.\(^{82}\)

A basic awareness of agricultural developments in medieval Europe is crucial to understand these processes. The High Middle Ages saw the appearance of nucleated villages, concentrated around a parish church and, in some cases, a noble house (‘castle’; see 3.1). This development corresponds with agricultural systems, or ‘agroecosystems’ if one wants to stress the close entanglement of humans and ecological systems, that distinguish between an intensively cultivated ‘infield’ and extensively used ‘outfield’. This infield is generally located near the village itself and consists of commonly managed agricultural lands that are fertilized regularly by the village flock, which explains the German name Dungland. The outfield by contrast is composed of areas that are cultivated more irregularly or possibly not at all. In such a context, it is only to be expected that boundaries between communities are drawn in their extensive outfields and that the need to clearly demarcate them is a result from local conflicts. Moreover, the description of outfields and common lands, as Wildland, or terres sauvages strongly suggests that the connection in Western Europe between general boundaries and wilderness originates in medieval agricultural practices.\(^{83}\)

The relevance of these changes for the historical development of frontiers can be demonstrated by referring to another medieval term: the march. Marches were specially designated jurisdictions located on the limits of the Carolingian empire (e.g. Bretagne, Spain, Saxony), headed by a margrave (Markgraf) whose main responsibility was to deal with potential enemy attacks. Marches were in effect the frontiers of the Carolingian Empire. The oldest occurrences of the term march, from the sixth century, did not refer to political boundaries, but to the uncultivated land between two properties, ‘wilderness’. In some German-speaking regions it was even synonymous with the term Wald (forest). The notions of frontier and wilderness were thus closely connected to each other.\(^{84}\)

A charter from 1313 regarding the castellany of Couvin, located on the frontier between the Prince-Bishopric of Liège and the County of Hainaut, clearly shows the connection between military organisation and agricultural practices. According to this document the inhabitants of the castellany, the town of Couvin and its surrounding villages, constituted one ‘banner’, and had access to the common pasture, woodlands, and waterways.\(^{85}\)

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\(^{84}\) Lieberman, The Medieval March, 11-12.

\(^{85}\) Liège, Chambre des Comptes de Liège, 656 Couvin 1/2/1313 (transcript Généamag).
The word banner, a flag that organizes armed forces into specific units, derived from *bannus/bannum*, the royal right to command, forbid, or punish. It could also, as in this example, refer to a territorial unit in which the inhabitants fought under the same banner and shared control over natural resources. The city of Geldern even designated its *Landwehr* (see 3) as a 'bantuin' in 1571. The area included in the ban is thus denoted as a garden. In Venlo, the toponym 'bantuin' has survived until this very day.\(^8^6\)

The description of specific territories as 'gardens' is of particular interest because it reinforces the aforementioned perception of frontiers as wilderness. Gardens figure after all as symbols of human mastery of the natural world. Calling one's own territory a garden means emphasizing the civilised or cultivated nature of one's own lands versus the wilderness that lay beyond. The medieval Dutch word for garden, *tuyn*, in particular refers to a fence or an enclosed space.\(^8^7\) Late medieval accounts from Heusden, Geldern, Grave and Venlo even use the word as a verb to describe the making of a fence with planks, branches and thorn bushes.\(^8^8\)

The use of the garden concept is not just a play on words: wartime areas perceived as lying outside one's own 'garden' were far more likely to experience the full extent of armed forces' destructive force, which contributed to the spread of actual wilderness (see also 4.2).\(^8^9\)

The symbolic depiction of a territory as a garden relates to the late medieval Maria cult, in which Maria was commonly portrayed within an enclosed garden, which represented the Garden of Eden.\(^9^0\) This garden imaginary rose to particular prominence in the medieval County of Holland. The accounts kept by the count's administration indicate that in the fourteenth century his army actually went to battle with a banner depicting a fence, and Willem van Oostervant, later known as William VI of Holland (1404-1417), founded a new chivalric order in 1387: the Order of the Garden (*Orde van de Tuin*).\(^9^1\) The County of Hainaut, united with Holland through a personal union, also used the term 'jardinet', 'little

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\(^{8^8}\) SLC, Archief Gemeente Grave, inv. nr. 217, fol. 6v, 7r., 15r, 26r, 94r, 146v, 151r, 152r, 257r, 258r, 267v, 268r, 277v. (transcript Rien van den Brand); Bondam, 'Oudste stadsrekening', 109-110; de Groot, *De stadsrekeningen*, 1384 f. 5, 1385 f. 7, 8, 39, 1386 f. 7, 1387 f. 24, 26, 28, 1388 f. 9, 15, 26, 1397 f. 8-9, 1399a f. 8, 1402 f. 9, 20, 1404 f. 24, 1405 f. 14, 1406 f.8, 1407 f.15, 1408 f.10, 1409 f. 10-12, 14, 1412 f.41, 1415 f.28; Kuppers, 'De stadsrekeningen', 9, 11, 20, 22, 34, 48, 60, 61, 69-72, 83, 92-93, 105, 158, 220, 235, 296.


\(^{9^1}\) van Tol, 'De Orde van de Hollandse Tuin'; van Winter, 'De Hollandse Tuin', 31-59.
Figure 2.1 The Leo Belgicus prevents Spanish pigs from entering the 'Garden of Holland', late sixteenth century (RA, RP-OB-77.682).

Figure 2.2 The Leo Belgicus guards the gate to the 'Garden of Holland', 1615 (RA, RP-P-1935-836).
garden', to describe its territory in the 1390's. The diminutive might have been adopted to distinguish it from the Jardin de France, which denoted the Île de France.  

This emphasis on the medieval origin of the garden terminology puts better-known early modern characterisations into perspective. The French engineer de Vauban's description of France as a 'square field' (pré carré) protected by a mixture of fortresses and 'natural frontiers', for instance, has its origin in these medieval ways of frontier perception. The same applies to the famous 'Garden of Holland' (Hollandsche Tuyn), which will be forever associated with the Eighty Years War (1568-1648). Two etchings related to this conflict are of particular interest here (see figures 2.1 and 2.2). The first, dating 1615, depicts a lion (the Leo Belgicus) guarding the entry to the Hollandsche Tuyn against Spanish intruders, which are accompanied by a leopard. This animal symbolised untrustworthiness and treachery, a meaning derived from medieval bestiaries, which treat leopards as illicits hybridizations of lions and pards (mythical creatures).

The second, from the late sixteenth century, portrays a lion defending his 'garden', a fence, against Spanish pigs. The rendering of Spanish forces as pigs not only reinforces the notion of a garden, but might also refer to the forced conversion of Jews and Muslims. The anonymous artist has also given the sea a very prominent place, as an obstacle that the pigs had to cross. The apparent paradox of the wilderness-garden terminology, an aspect of frontiers that will be referred to again in further sections, is indeed that the very defence of a 'garden', a territory, against wilderness, could also be based on wilderness elements. It is exactly this military perception of frontier landscapes that we will now examine.

2.1.2 Military Perception of Frontiers

Studying the ways armed forces perceived, and ultimately managed, frontiers might seem to be relatively straightforward. The political-military importance of these areas would after all have ensured a relatively strong interest on the part of rulers and/or states. It is in fact well known that peripheral areas, and frontiers in particular, were generally charted before a political entity's core regions. The oldest maps from the Meuse Region, made with a military purpose in mind, date to the fifteenth century at least. Charles the Bold, Duke of Burgundy, paid painters in the 1460's, during his conflicts with the Prince-Bishopric of Liège, to make two maps: one of the frontier between the Duchy of Limburg and the Prince-Bishopric, and

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92 Dauphant, Le royaume des quatre rivières, 211; Flammang and Van Eckenenrode, 'Le jardinet de Hainaut'; 45-49; de Planhol and Claval, An Historical Geography, 104.
93 Bitterling, L'invention du pré carré.
94 Pastoureau, Une histoire symbolique, 56-59.
95 van Winter, 'De Hollandse Tuin', 82-87.
an itinerary, a road map, that connects *les pays de par deça* (‘the lands over here’; the Burgundian possessions in the Low Countries) with *les pays de par dela* (‘the lands over there’; the Duchy of Burgundy and Franche-Comté).\(^97\)

The maps themselves do not seem to have been preserved, but it is possible to get an idea of what they might have looked like from a sixteenth-century map, now kept in the Royal Library in Brussels (see figure 2.3). This map, dating to 1544, depicts an itinerary from Luxemburg to Paris. It has to be read from the corner on the lower right to the one on the upper left. It was probably made in preparation for an actual invasion of France, given that Habsburg troops were actively fighting French forces at that time. While this map clearly used different conventions than military maps from the eighteenth and nineteenth century, it does show a clear emphasis on waterways and woodlands. These natural elements are depicted in a very schematic way, but it is still possible to identify the Meuse and Ardennes figure on the foreground.

*Figure 2.3 Itinerary from Luxembourg to Paris, 1544 (BRB, manuscrits, 22089).*

Waterways and woodlands are in fact a prominent feature of all military maps, which were never meant to be realistic depictions of landscapes, but guides to commanders on how to take advantage of them and avoid potential pitfalls. The eighteenth-century Ferraris map of the Southern Netherlands, named after the Habsburg engineer, the count de Ferraris (see

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\(^97\) Paviot, 'Les cartes et leur utilisation', 209-210, 213.
figure 2.13), might appear to be more accurate than this medieval-looking map from 1544, but it still does not depict economic activities that were considered irrelevant for military commanders. In order to properly understand the assumptions and perceptions on which these maps are based, they have to be read in juxtaposition with the original written explanations that accompanied them, or with military handbooks. These sources confirm that military commanders saw woodlands and waterways as potentially dangerous environments, as obstacles to military movement, but also as potential aids to defence, as sources of fuel, and transportation routes.

The fact that many medieval and early modern woodlands were managed as coppice wood or pollards rather than high forest would have reinforced this perception (see also 4.1). Because these trees and shrubs did not develop a full crown, much more sunlight could reach the soil, which in turn encouraged dense undergrowth. A sixteenth-century miniature depicting a boar

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hunt shows hazel shrubs managed as coppice wood in the background, which constitute a serious obstacle to the mounted hunter trying to reach his comrades. Such forests could be turned into even more effective barriers by cutting down trees or constructing hedges.\textsuperscript{99}

The Ferraris map also contains several inaccuracies, possibly because enlisted personnel of the artillery regiment stationed in the Austrian Netherlands carried out most of the measurements. This was done in order to speed up the process and save money. Gunners, and Austrian ones in particular, were well educated, but they did no have the extensive training of a military engineer. The Villaret map, made by French military engineers during their invasion of the Austrian Netherlands in the 1740's, is thus far more precise. It also provides an interesting perspective on the issue of military perception of the environment, because due to time restrictions the engineers concentrated on drawing strategic landscape elements, such as the course of the Meuse River or the fertile lands of Hesbaye, and refrained from depicting either the extensive heathlands of the Campine or the woodlands of the Ardennes (see figure 2.5).\textsuperscript{100}

\textbf{Figure 2.5 Depiction of the landscape to the north of the city of Tongres, Villaret map, 1748 (INIGF, CH 292 Carte topographique de la partie de la Belgique comprise entre Gand et Tournay, Maastricht et Liège, levee par Villaret, ingénieur du Roi, 1748).}

\textsuperscript{99} Woodlands used as pasture, on the other hand, would have assumed a far more open park-like form. \textsuperscript{100} INIGF, Carte topographique de la partie de la Belgique comprise entre Gand et Tournay, Maastricht et Liège, levee par Villaret, ingénieur du Roi, 1748; Lemoine-Isabeau Claire and Helin Etienne, \textit{Cartes inédites}; Lemoine-Isabeau, \textit{Les militaires}, 48-67, 110, 144-145, 180, 212-218.
A far more important question than issues of accuracy or completeness is whether these maps actually reflect the perceptions of army members in general. Only a handful of higher-ranking officers and engineers would have been familiar with them. The information encompassed in these maps was not public; it constituted a carefully guarded secret.101 When French soldiers took Dutch hussars prisoner near Mézières in 1747, during the Austrian War of Succession (1740-1748), they executed them. This action was justified by arguing that these cavalrymen wanted to abduct the abbot of Saint-Hubert, but French officers were also very concerned that pencils and paper had been found among their belongings.102

While it is very unlikely that the average combatant would have been familiar with military maps, he still would have shared the same feelings towards woodlands, waterways, and other kinds of 'wilderness' and expressed these sentiments in divers kinds of tales and stories. John M. Collins actually made a connection between military perceptions of woodlands and fairy tales in his military geography handbook, as both depict woodlands as 'dangerous'. He just intended this as a joke, and failed to see that the connection between tales or sagas and armed forces is very real.103 The average storyteller in premodern Europe was far more likely to be an adult male than the stereotypical 'Mother Goose' character. The essential feature of a good narrator, aside from being able to speak fluently, was travelling experience. Soldiers and sailors therefore constituted a substantial group among them. The brothers Grimm for instance paid J. F. Krause, a pensioned non commissioned officer of the Saxon cavalry, because he was a famous storyteller, and also to obtain some typical soldiers' tales.104

The roots of these stories lay, at least partially, in the Middle Ages, and more specifically in chivalric romance. The tale of 'Les Quatre Fils Aymon' or Renaud de Montauban and the horse Bayard, for example, can be dated to the twelfth century, and describes events that supposedly took place in the Ardennes during the reign of Charlemagne. It had a major role in contributing to the perception of the Ardennes as an impassable wilderness, and was still told in Lorraine during the eighteenth and nineteenth century with minor adaptations; the four knights had simply become soldiers.105 In a medieval context the actual narrating would have been left to minstrels or heralds rather than combatants, but these storytellers also had a strong connection to warfare. Heralds accompanied armies on

101 Printed maps for instance were far less detailed than their manuscript versions. Desbrière, Cartes et mémoires, 6; Desbrière, Chronique critique, 235; Harley, 'Silences and Secrecy'; Katajala, 'Maps, Borders and State-building'; Lemoine-Isabeau and Helin, Cartes inédites, 19; Lemoine-Isabeau, Les militaires, 67-72; Lemoine-Isabeau, La cartographie, 52-56; Schäfer, '"Krygsvernuftingen" ', 239-245.
102 Desbrière, Chronique critique, 235.
103 Collins, Military Geography, 41.
105 Hopkin, Soldier and Peasant, 221-236; Lejeune, 'L’ Ardenne', 69-72.
campaign to record events and identify noble participants. The herald Gelre for instance, the author of one of the most famous armorial books in medieval Europe, wrote a series of poems in which he praised the chivalric deeds of knights from the lands of the Meuse and Rhine. Ministrels on the other hand had to raise the moral of the troops. The blacksmiths' guild of Liège, one of the most powerful associations in the city, enlisted two ministrels for life in 1403 to accompany them on military campaigns and processions.

The Rijmkroniek of Jan van Heelu, written in 1288-1290, which narrates the duke of Brabant's victory in the battle of Wörringen (1288) and the events that led up to it, is another good example. It recites real events that happened relatively recently and is therefore not a fictional tale in the same way as the Romance d' Arthur or Lancelot's quest to find the Grail, but still draws on the same stereotypes. It claims in effect that when Duke Jan I of Brabant advanced through the Ardennes in the winter of 1286-1287, he rode through the 'wildest lands of the German Empire'. The poet also added a very practical element, however, one that can also be found in later military descriptions: the Ardennes were considered as inhospitable lands because invading forces found it difficult to procure sufficient amounts of food there. The duke, anticipating these problems, ordered his men to carry provisions for themselves and their horses with them. The supposed impassability of the Ardennes, or indeed any other huge stretches of wilderness, was therefore connected to logistical issues.

The duke of Brabant's response to these logistical problems deserves further scrutiny. It demonstrates that fast moving mounted forces were able to overcome most of the risks posed by these barren environments. Areas of wilderness certainly had their share of armed forces passing through. One just has to distinguish between huge invading forces and smaller armies with local bases to fall back on. Only the first category would have been relatively rare, at least when compared with more fertile lands, such as along the banks of the Meuse River. The nobility of the lands between the Meuse and Rhine even enjoyed a

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106 De Boer, Faber and van Gent (eds.), De rekeningen I 1393-1396, LXI-LXII; Rudd, Greenery, 91-128; Simonneau, 'Le héraut bourguignon'; van Amrooj, Spiegel van ridderschap; Verbij-Schillings, Beeldvorming, 224-232, 238-244.
107 Fairon, Chartes, 132-133; Mora-Dieu, 'Les corporations', 200.
108 Jan van Helu uses the term Oesselinck or Oesseninc for the Ardennes, which might also be a reference to its wilderness character (woest). Goossens, De geografie, 10; Sleiderink, De stem van de meester, 87-97; Willems (ed.), Rymkronyk, 100, 130-132.
particular warlike reputation during the High and Late Middle Ages, mainly because of their willingness to serve for pay or booty when an opportunity presented itself.\textsuperscript{110}

The major difference between these two kinds of forces can be demonstrated by taking the French invasion of the northern Meuse Region, in 1388, as an example. This expedition was directed against Guelders and Jülich and had to pass through the Ardennes, Hohes Venn, and Eifel. Despite the assembly of numerous wagons for this purpose, the chronicler Jean Froissart (c. 1337- c. 1405) claims the army column measured no less than forty-five kilometers in length, logistical preparations would prove to be utterly inadequate in the face of difficult terrain, hostile inhabitants, adverse weather (incessant rains), and the cold climate. The size of this invasion force quickly became a liability rather than an asset: no less than three thousand labourers had to clear the roads between Virton and Neufchâteau in the Duchy of Luxemburg.\textsuperscript{111}

We are fortunate to have an eyewitness account of the expedition: the famous French poet Eustache Deschamps served in this army and later commented on his experiences in several ballades. One explicitly warns against the dangers of a winter campaign, another complains about the money and horse he lost. The French army eventually accomplished its goal, the duke of Guelders and the count of Jülich signed a peace treaty, but the campaign was hardly the glorious victory the soldiers had expected. Many French noblemen were even taken prisoner by local forces, which were not hampered by these same environmental constraints.\textsuperscript{112} It reveals the practical significance of the wilderness character armed forces attributed to large areas of the Meuse region.

2.1.3 The Meuse River as a Symbolic Frontier

Given the predominance of large stretches of wilderness in the Meuse basin, such as the Campine, Peel, Hohes Venn, Eifel, Ardennes, Woëvre, and Argonne, the use of the Meuse River as a symbolic frontier between the kingdom of France and the Holy Roman Empire might seem to be self evident. It should be stressed therefore that while the ecological characteristics of the Meuse Region have an essential role in explaining the political history of these lands, there is nothing predestined about the use of the Meuse as a frontier marker. This particular use, which has consequences to this very day, as the current basin of the Meuse River is divided among five states, is an accidental outcome of centuries of historical

\textsuperscript{110} Burgers, 'Die Grafen von Holland-Henegau'; Burgers and Damen, 'Feudal Obligation or Paid service'; Kappelhof, 'De heren en drossaarden', 20-21; Lyon, 'The Fief-Rente'; Verbruggen, De krijgskunst, 128-129.

\textsuperscript{111} Froissart, Chroniques, vol. 13, 196-198; Laurent and Quicke, L’accession de la Maison de Bourgogne, 220-253.

developments, in which political, economic, cultural, and military influences were at least as important as ecological ones.\textsuperscript{113}

During the early Middle Ages the Meuse Region was in fact not a frontier at all. It constituted the core of the Carolingian Empire. The Carolingian dynasty came originally from the middle part of the Meuse basin, more precisely from Hesbaye, the fertile lands to the north of Liège. Names such as Pepin of Landen and Pepin of Herstal are very revealing in this regard. Charlemagne even established his empire's capital in Aachen. This does not diminish that contemporaries already perceived the Ardennes as a wilderness. The main point is that in the early Middle Ages an area such as the Ardennes could become the core of an empire despite its apparent wilderness character. Charlemagne liked to hunt in the Ardennes and might actually have killed some of the last aurochs living in Western Europe.\textsuperscript{114}

The wilderness aspects of large areas of the Meuse Region became relevant in the specific context of the division of the Carolingian Empire. It is hardly a coincidence that the two major agreements that settled disputes over this inheritance came about in the Meuse Region: the treaties of Verdun (843) and Meerssen (870). It is particularly as a result of the latter treaty that most of the Meuse Region, which had become part of Lothair I's Empire, was incorporated into the eastern half of Charlemagne's former imperium.\textsuperscript{115} The Meuse only served as a limit between what would later become the kingdom of France and the Holy Roman Empire in Champagne and the Argonne. Further north the Scheldt replaced it as the official dividing line. Even in these southern areas, the importance of the Meuse River can be called into question. A list of testimonies, assembled in 1288 on request of emperor Rudolf of Habsburg (1273-1291), regarding the exact limits of the Empire in the Argonne, demonstrate that not the Meuse, but a small river, the Biesme, a tributary of the Aisne, served as the actual boundary marker.\textsuperscript{116}

The gathering of these testimonies reflects the emperor's growing discomfort with French expansion towards the east. It is exactly in the late thirteenth century that the kings of France incorporated the Meuse River into a discourse that presented their kingdom as delineated by four rivers (the Meuse, the Saône, the Rhône and the Scheldt). The year 1301 was a crucial turning point, for the duke of Bar, whose duchy lay on both banks of the Meuse River, had to acknowledge Philip the Fair (1285-1314) as his overlord for 'Bar non-mouvant', more or less the part of the duchy located on the left river bank. This made him a fief holder.

\textsuperscript{113} On the use of woodlands as frontier markers see Bechmann, \textit{Trees and Man}, 259-262; Clément, \textit{De la marche-fronière au pays-des-bois}, 133-156; Dubois and Renard, 'Forêts et frontières', 29-34; Higoumet, 'Les grandes haies forestières'.
\textsuperscript{114} Arnold, \textit{Negotiating the Landscape}; Müller-Kehlen, \textit{Die Ardennen}, 109-110; Rousseau, 'La Meuse', 49-64; Suttor, \textit{La Meuse}, 221-237.
\textsuperscript{115} Pettiau, 'Un espace frontalier'; Suttor, \textit{La Meuse}, 231-237.
of both king and emperor, whereas until this point his entire duchy had been part of the Empire. In other words, the Meuse River became a dividing line because of European politics in the High Middle Ages. This still did not turn the Meuse River into a real frontier, however, since the Duchy of Bar still occupied both riverbanks. The Meuse only served as a frontline in the 1420's, when troops loyal to Henry VI (King of France, 1422-1453) occupied almost the entire kingdom of France north of the Loire River. Partisans of Charles VII (King of France, 1422-1461) still held out in a handful of fortresses east of the Meuse River, in other words: in the Holy Roman Empire. It is in this specific context that Jeanne d'Arc, born in Domrémy, on the left bank of the Meuse River, rose to prominence.117

The example of the Duchy of Bar refers to a crucial aspect of the distinctions between the Meuse's symbolic and practical value as a frontier marker. During the Middle Ages, the ways in which the various principalities that actually composed 'France' and the 'Holy Roman Empire' interacted with each other and drew boundaries were often more important than perceived boundaries between these larger entities. Most of these smaller principalities straddled both riverbanks, as illustrated in Map 2. The Meuse River only served as a frontier along rather small stretches of its course: in 1250 between Namur and Luxemburg near Poilvache, between Namur and Liège from Andenne until Huy and between Loon and Brabant on the one hand and Guelders on the other near Stokkem-Maaseik and Oss-Cuijk. In some of these areas copper boundary poles were put in the Meuse during the Late Middle Ages. Processes of political amalgamation reduced its role as a dividing line even further (see map 3). Today, it only serves as a border between the Dutch and Belgian provinces of Limburg, as depicted in Map 1.118

The limited role of the Meuse as a frontier marker can be explained by drawing attention to its economic importance. The river was one of the main transport routes in Western Europe since at least late Antiquity, especially for large volume goods such as wood, metal, or stone. Such traffic inevitably led to attempts to control trade networks and extract income (e.g. tolls). Military transportation also had to rely on rivers because moving artillery or large quantities of food over land was a very laborious task. The detailed accounts of the fifteenth-century Burgundian administration make it clear that the transportation of the heaviest guns, which could easily weigh two tons, necessitated the use of specially reinforced wagons drawn by over thirty horses. Their ammunition, specially cut out stone or cast iron balls, had to be carried along in wagons that also required more horses than usual: a wagon carrying twelve bullets needed nine horses instead of the usual three or four. Charles the Bold

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117 Dauphant, Le royaume des quatre rivières, 121-122; Toureille, Robert de Sarrebrück, 78-86.
118 Dauphant, Le royaume des quatre rivières, 127-128; Panhuysen, 'De politieke verhoudingen tussen Brabant en Gelre'; Sutor, 'Le rôle d’un fleuve', 361-364. See also Alberts, Overzicht.
had to mobilise almost three thousand horses to transport his artillery (one hundred and twelve guns) and associated material during the 1473 campaign against Guelders.\textsuperscript{119}

The main issue with land transport was in effect not that it was slow and cumbersome, even though this was certainly an important consideration. It was rather its sheer economic cost: these horses and wagoners needed to be fed and paid. When the dukes of Burgundy assembled their armies they did so preferably near waterways: Mézières in 1465, Namur in 1466, and Maastricht in 1473. Transporting artillery over water does require, however, that a commander controls both riverbanks, or at the very least that his ships do not have to pass through hostile territory. Artillery becomes more standardized from the sixteenth century onwards and consequently easier to handle, but during this entire research period sieges required relatively large amounts of heavy artillery (e.g. twenty-four pounder guns, howitzers and mortars instead of twelve or six pounders), which would have to be specifically brought up for that purpose.\textsuperscript{120} It is revealing that a plan of the French engineer Filley to block an Allied advance towards Dinant in 1695 by constructing a dam in the Meuse, was never executed because it would also make a French counter attack towards Namur impossible.\textsuperscript{121}

The use of the Meuse River for transporting troops and their horses was far less important, because marching over land was faster and easier. The militias of cities located next to the Meuse made frequent use of river transport, but the actual number of troops could be as low as a dozen.\textsuperscript{122} The accounts of the city of Venlo from 1412 specify for instance that it paid for the transportation of about fifty men on two baardse to Batenburg, a fortress located between Lith and Grave. A baardse was a relatively shallow and small ship, which made it ideal for navigating rivers as well as carrying out military expeditions on the North Sea. In the County of Holland the use of ships, cogs as well as baardsen, during military campaigns was so conventional that the number of people that each community had to supply was measured in oars.\textsuperscript{123}

The use of river transport remained a distinct possibility well into the early modern period as long as the navigability of the Meuse River itself allowed it.\textsuperscript{124} A temporary drop in the water level of the Meuse, or conversely, a sudden flood, would have made it impossible for boats to pass through. The Freiherr von Natzmer (1654-1739), an officer in the Dutch army, remembered in his memoires how the low water level of the Meuse significantly

\textsuperscript{119} Decuyper, 'De Bourgondische artillerie', 218-227; Rousseau, 'La Meuse'; Sommé, 'L’artillerie'; Suttor, \textit{La Meuse}, 444-446.
\textsuperscript{120} Decuyper, 'De Bourgondische artillerie', 221-227; Marchal, \textit{Inventaire}, 135; Naulet, \textit{L’artillerie}, 186-212.
\textsuperscript{121} Muller, 'Les gués'.
\textsuperscript{123} de Groot, \textit{De stadsrekeningen}, 1405 f. 14-16, 1407 f. 18, 22, 1412 f.18, 44; Fritze and Krause, \textit{Seekriege}, 57-58; Jansen and Hoppenbrouwers, 'Heervaart in Holland'.
complicated their retreat from Maastricht in 1676, since the sick and wounded, as well as the cannons, could not be transported by water. A notarial act from Borgloon, dating to 1699, contains the testimony of a lieutenant, possibly a promoted ranker, who fought in the German regiment Furstemberg of the French army since 1674. This exceptional eyewitness account had to prove, probably in the context of an inheritance settlement, that several men from Rekem died while serving with this unit. It notes that the regiment travelled down the Meuse from Maastricht to Dinant before marching to Charleroi and then to Spain. The construction of new forts at Stevensweert (near Maaseik) and Navagne (near Visé) by the Habsburg government in respectively 1633 and 1634 also attempted to secure traffic over the Meuse after the Dutch conquest of Maastricht (see figure 2.6).

Figure 2.6 The fort of Navagne in 1670, a few years before its destruction by a French invasion army (1674). Painting by Josua de Grave (RA, RP-T-1911-100).

Throughout these six centuries many rulers tried to reunite the entire Meuse Region, and several of them could claim to have been temporarily successful. Any of these actions could, potentially, have led to the unification of the region under one political entity. Charles the Bold (1467-1477), for example, made major efforts to restore Lothair's former empire (855-869) and effectively controlled almost the entire northern half of the Meuse Region by the early 1470's. He died at the battle of Nancy while fighting for control over the southern half.

\[125\] von Adlersfels-Ballestrem (ed.), Memoiren, 24-25.

\[126\] I am grateful to Mathieu Kunnen for providing me with a transcript of this notarial act. RAH, Kleine Familierarchieven, inv. nr. 3346 (microfilmnr. 1714174, item 6).

\[127\] Sangers and Simons, Geschiedenis, 82-83; van Hoof and Ramakers, ‘De militair-strategische betekenis’, XXIX.
Charles V (1506-1555) again united a considerable part of the region, by occupying the Duchy of Guelders, but the Dutch Revolt caused a renewed separation. The armies of Louis XIV (1643-1715) seized large stretches of the Meuse basin, even taking Maastricht in 1673, yet eventually had to abandon many of their conquests. Napoleon I (1804-1814) ruled over the entire Meuse Region after the incorporation of the kingdom of Holland in the French Empire (1810) until his abdication caused renewed divisions. The Meuse Region might have been perceived as a symbolic frontier since the early Middle Ages, but it only became a real one as a result of specific political events.

2.2 MANAGING FRONTIERS

2.2.1 Strongholds and Linear Defenses

The previous section has demonstrated the tension between the symbolic value attributed to the Meuse as a frontier and the historical reality. It especially emphasized the ways that army members perceived their environment, in terms of the wilderness-garden antagonism. This section will now examine how armed forces actually influenced and constructed frontier landscapes. It will first analyse the core of frontier strategies: concentrated defence (strongholds) versus drawn-out linear fortifications. Both options had their value and limitations. The choice for one or the other can therefore be used to gain insight into the nature of the perceived threat, the 'other' standing on the opposite side of the frontier.

Fortresses control their surrounding territory, not only through their strategic location, but also by operating as a seat of government. A classic example is the city of 's Hertogenbosch, founded at the end of the twelfth century in what was originally a forested area (the name literally means the Duke's Forest). This city functioned as the centre of the northern part of the duchy of Brabant, the Meiërij of 's Hertogenbosch. When the Dutch captured the city in 1629 they could therefore lay claim to the entire Meiërij. It was also a key stronghold in the defence of the Meuse River, first for the dukes of Brabant and later for the Dutch Republic.128

The city of 's Hertogenbosch was only one of many new towns founded in the High Middle Ages with strategic considerations in mind. Rulers throughout the Meuse Region granted charters of liberties and city rights for similar purposes to settlements as Geertruidenberg, Nieuwstad, Stokkem, Montmédy-Haut, and Marville. Villagers typically received such privileges in the expectation that they would defend a ruler's fortress or

128 De Cauwer, *Tranen van bloed*, 143, 261-263; Deprez, ‘La politique castrale’.
consolidate the frontier more generally.129 The main difference between these medieval towns and their sixteenth- and seventeenth-century counterparts (Mariembourg, Rocroi, Philippeville, Stevensweert, and Longwy) is that armies, and more particularly soldiers, often had an active role in the latter's construction; a reflection of processes of state formation. Another noteworthy characteristic is the concentration of these early modern defences around the Meuse River when it enters the inhospitable landscapes of Marche-en-Famenne and the Ardennes. This part of the Meuse Region became especially important as a corridor within the context of the Habsburg-Valois rivalry in the 1540's and 1550's.130

While these fortresses did control strategic access points, they would still be unable to defend a 'frontline' on their own. It is only in exceptional cases that rivalling strongholds were built so close to each other that one might speak of true frontier in the sense of a frontline. The best example is the long-standing rivalry between Bouvignes and Dinant with the destruction of Dinant by Burgundian forces (1466) as a notorious climax. The city of Bouvignes, in the County of Namur, was founded in the twelfth century as a counterpart to Dinant, in the Prince-Bishopric of Liège, on the opposite (left) bank of the Meuse River. Copper boundary poles were put into the river to demarcate their respective territories, and by 1465 the cities' respective fortifications had been expanded to such an extent that gunners could actually target their adversary's defences.131

The example of Bergeijk, in the Campine on the Brabant-Loon frontier, on the other hand, might be more typical for most frontiers within the Meuse Region. Of particular interest is a charter from 1415, written down in the context of a local boundary dispute. Such disagreements invariably involved witness testimonies of the eldest members of a community. In this charter villagers of Pelt (Overpelt-Neerpelt) declared that several decades earlier, possibly in 1334, an official of the count of Loon wanted to burn neighbouring Bergeijk in retaliation for a Brabant attack on the count's town of Beringen. The villagers could convince him not to do so by pointing out that the count also owned twelve manors in the community. Apparently, a fixed boundary had not yet been established in the heathlands of the Brabant-Loon frontier. The inhabitants of Bergeijk again narrowly avoided a raid in 1388, when they persuaded the duke of Guelders that their lands depended on both Brabant and Liège.132

\[\text{\textsuperscript{129}}\text{Aarts and Hermans, 'Castle Building', 17-18; Berens, Territoriale Entwicklung & Grenzbildung, 125, 137; Reichert, Landesherrschaft, vol. 2, 585, 609-610, 615; Van Laere, 'Montmédy, een versterkte garnizoenstad', 12-14; Yante, 'Franchises, paysages et environnement', 134.}\]

\[\text{\textsuperscript{130}}\text{Gaber, 'Marville et l'espace frontalier'; Hasquin, Une mutation le "Pays de Charleroi", 18-23, 251-253; Sangers and Simons, Er ligt een eiland in de Maas, 82-83, 244-251; van den Eynde, 'La fonction militaire'; van Nispen, Willemsstad, 25-33.}\]

\[\text{\textsuperscript{131}}\text{Borgnet, Bouvignes; Bormans, Lahaye and Brouwers (ed.), Cartulaire, vol. 2, 103-110; Vaughan, Charles the Bold, 153.}\]

\[\text{\textsuperscript{132}}\text{Vangheluwe, 'Bergeijk', 309-324.}\]
These events demonstrate that medieval principalities were assemblies of lands over which a ruler could claim some right (notably taxation or justice). Power was not exerted uniformly across the whole territory. Over time general boundaries did of course become more clearly defined, but it is illuminating that even in the late eighteenth century, when the Ferraris map was drawn, major issues regarding the exact location of the borders between the Austrian Netherlands and the Prince-Bishopric of Liège still remained unsolved. The gunners who drew this map even went through considerable trouble to denote enclaves and contested boundaries.\(^{133}\)

The awareness that premodern frontiers could assume the shape of both zones and actual frontlines is crucial for understanding how armed forces interacted with frontier landscapes. Many armies, especially up to the early eighteenth century, simply intended to raid and devastate, or otherwise extract income from enemy lands (contributions), rather than to occupy territory. Revealing in this regard is a treaty from 1707, signed by representatives of the French king and the Dutch Republic. The French government agreed to pay contributions and was not to raid the land of Cleves, and in return the Dutch would not invade the lands to the west of the Meuse River with a force of less than four thousand men. In other words, in 1707 a force of four thousand men was accepted as a dividing line between an army bent on establishing contributions and one able to occupy territory.\(^{134}\)

When the French engineer de Vauban devised his famous 'iron belt' (frontière de fer) in the late seventeenth century, two lines of fortresses along the frontiers of Louis XIV's kingdom, he left a gap between the Meuse River on the one hand and the Moselle and the Rhine on the other. In this area it was assumed that the Ardennes, a 'natural frontier', constituted an adequate barrier. As the treaty from 1707 demonstrates, this defence system deterred only large invasion forces, not fast moving bands of mounted raiders. From 1644 to 1748 the French monarchy thus had to construct special defensive lines on the Meuse and Semois Rivers to cope with this threat.\(^{135}\)

These linear defences deserve closer attention because they show the difficulty of using the Meuse, or any other river, as an obstacle. The French government connected major strongholds (Mézières, Sedan, and Verdun) to each other through the garrisoning of medieval fortresses on the Meuse River and the creation new watchtowers and earthen embankments (redoubts) near river fords. Soldiers of the royal army concentrated in the former points of defence, while guarding the latter linear defences became the responsibility of thousands of

\(^{133}\) BRB, Cartes et plans, Ms. IV 5.567 Carte de Ferraris; Chouquer, \textit{Traité d'archéogéographie}, 23-38; Genicot, 'Ligne et zone'; Mougeot, 'De la périphérie à la frontière', 149-153; Noordzij, \textit{Gelre}, chapters 3-4.


armed peasants, drawn from the lands between the Meuse and Aisne. The costs of this defence were manifold: it drained manpower from the regular army, removed peasants from their work, and consumed massive amounts of timber. A surviving report from 1710 indicates that the construction of a single redoubt required one hundred twenty eight fascines, bundles of branches, and two hundred fifty pallisades. Yet these lines rarely succeed in keeping well-organised raiders at bay.\textsuperscript{136}

The character of the Meuse River itself lay at the heart of the difficulties: depending on the season multiple fords could appear or disappear, and each had to be fortified. This unpredictable behaviour also lowered the life expectancy of earthen fortifications considerably: the seasonal flooding of the Meuse ensured that if these redoubts were not properly maintained they became completely unusable due to erosion after a few years. Yet worst of all was that despite these defensive efforts enemy forces crossed the Meuse River anyhow, either because armed peasants could do little to oppose them, or because they found other ways to get across; by using boats or swimming. The French government responded to these issues by establishing a different defensive line, on the Semois, and by increasing the number of guards. M. de Lagrange, lieutenant de roi in Rocroi, even ordered the cutting of wood alongside the main road from Sedan to Bouillon in 1701 so that enemy troops could be spotted more easily.\textsuperscript{137}

The problems faced by French generals were hardly unique, as every effort to defend the Meuse River faced the same difficulties: the city of 's Hertogenbosch depended on temporary fortifications (blokhuizen) and patrolling by boat to fend off attacks from Guelders in the fifteenth and sixteenth century, and Imperial troops constructed earthen redoubts to defend themselves against Belgian rebels on the west bank of the Meuse in 1789-1790. Such defensive efforts could be hampered by harsh winters, when invading forces could simply walk over the frozen Meuse, as well as dry summer months.\textsuperscript{138} The Duke of Alba's attempt to keep William of Orange on the east bank of the Meuse River in 1568 famously failed when the prince's army found a ford in the Meuse between Stokkem and Obbicht on the night of five to six October. Credit for this operation probably has to go to Karel van Bronckhorst, Lord of Obbicht, who fought with the rebel army. In order to prevent surprises such as this, Michel de Warisoul, castellan of Samson, sent a report in September 1568 to the count of Berlaymont, stadtholder of Namur, listing all possible crossing points between Dinant and

\textsuperscript{136} Desbrière, \textit{Chronique critique}; Desbrière, 'Le bois', 243-247, 249.
Huy, including suitability for cavalry, infantry and wagons. There were no less than thirty-one.\(^{139}\)

Especially instructive regarding the difficulties posed by linear defences is that the most successful defensive lines in a long-term perspective proved to be those that served multiple purposes, and were firmly rooted in local socio-economic structures. Earthen embankments with hedges planted on top of them, often referred to as *Landwehren*, comprised important boundary markers in many parts of the Meuse Region, especially the northern half, up to the eighteenth century.\(^{140}\) When the chronicler Jean de Stavelot (1388-1449) wrote that horsemen from Maastricht rode up to the hedges of Heure le Romain in the late fourteenth century to draw out the defenders, he meant that they approached the barriers that defined the spatial limits of the village. The village might have been fortified with ditches and earthen embankments in the same way as a city wall. Such structures did not just protect against invading forces, but against more mundane threats as well (see 3.1) and could keep livestock within the community's lands.\(^{141}\)

2.2.2 Road Networks Versus Wilderness

The previous section revealed how particular threats necessitated the adoption of different types of defence: individual strongholds or linear defences. This section concerns itself with one essential aspect of these defensive efforts: the tension between road networks and the conservation of wilderness. Frontiers were landscapes characterised by the threat of a potential enemy attack. The standard response to an invasion was blocking the invader's road of advance. Depending on local landscape features this could entail the obstruction of passageways with cut down trees (*abatis*) and ditches, the destruction of bridges and the obstruction of river traffic with stakes or palisades. Contemporaries thus not only perceived wilderness as dangerous because of its inherent nature, but also because these landscapes were far more likely to serve as hostile environments during armed conflicts.\(^{142}\)

Such needs could outweigh economic ones, creating certain tensions. A fifteenth-century miniature from the *Chroniques du Hainaut* captures this dilemma magnificently: labourers built a new road to connect two cities, but in doing so they reduce or even nullify the river and woodlands' value as defensive features (see figure 2.7). Building this road on the other hand would also give local potentates more control over traffic, on water and over land,

\(^{141}\) De Stavelot, *Chronique*, 114.
and thus the collection of tolls. Cities that had access to bridges over the Meuse, simply put chains between the bridge's pillars if they wanted to obstruct river navigation.\textsuperscript{143}

Figure 2.7 Fifteenth-century miniature of labourers building a road (BRB, ms. 9242 Chroniques du Hainaut, f. 270v.).

The city of Maastricht (Mosa Trajectum; bridge over the Meuse), for instance, assumed considerable strategic importance because of its location on a major Roman road, connecting Bavay to Cologne, and its control over one of the few stone bridges over the river. Maastricht retained its military value from the fourth century A.D., when the Roman army built a fort there, until its demilitarisation in 1868. Most roads in the Meuse region, as elsewhere in Western Europe, were tracks leading from one settlement to the next. A 1632 handbook for the maréchal des logis, the officer in charge of billeting troops, clearly depicts a variety of local road networks.\textsuperscript{144} The state of such paths, filled with mud piles and holes, and rarely designed to accommodate any movements beyond local traffic, obviously left much to be

\textsuperscript{143}Bormans, ‘Table des registres’, 268; Lemoine, \textit{L'enceinte}, 64; Moreau, \textit{Bolwerk der Nederlanden}, 271-273; Suttor, \textit{La Meuse}, 269-270.  
\textsuperscript{144}De Solemme, \textit{La charge du mareschal des logis}; Mourroux, ‘Stenay, ville militaire’, 50-51; Parker, \textit{The Army of Flanders}, 72-74; Richer, \textit{Abrégé chronologique}, 183; van Hoof and Ramakers, ‘De militair-strategische betekenis'.
desired. Officers of the bishop of Liège's army for example complained in April 1756 about soldiers losing their shoes in the mud when chasing vagrants in the Campine (see 5.2). They explicitly stated that the roads were impracticable to a military unit.\(^{146}\)

Given that building high quality paved roads rarely became a viable option before the eighteenth century, there were relatively few solutions available to solve these problems. Accounts from the village of Chatelineau, near Charleroi, show that during the seventeenth century the villagers regularly procured hundreds of fascines to throw on local tracks.\(^{147}\) In several of these instances, it is quite clear that these efforts were, directly or indirectly, stimulated by armed forces passing through. The main alternatives would be that the soldiers stayed longer in the area, or diverted from the tracks and trampled agricultural land in the process. Many legal acts or court records of war-related damage speak of armies cutting down hedges and trampling agricultural fields when passing through.\(^{148}\)

While armed forces complained regularly about the state of the road network, they also contributed to road degradation themselves.\(^{149}\) In 1665 for example, a new regional road connecting Liège and Sedan (le Chemin Neuf) was finished. This road had considerable economic value because it did not have to pass through the Spanish Netherlands. It thus allowed traders to avoid potential conflicts between the French and Habsburg monarchies, economic or otherwise. French forces also took advantage of this new passageway to invade the Meuse valley in 1667-1668, and effectively rendered the road unusable until repairs could be carried out.\(^{150}\)

Soldiers' reluctance to provide manual labour would have aggravated these difficulties. French military regulations from 1778 clearly state that pioneers had to be found locally whenever possible; that is, coercing peasants to provide manual labour. French militia regiments likewise received the onerous task of accompanying artillery on campaign, which involved providing muscle to drag cannon from the mud, fill up holes and cut down plants obstructing the way. Militia regiments were mainly recruited from rural conscripts, and had a significantly lower status than the volunteers of the regular army. French military engineers devised a new road near Mézières in 1748, but the actual building was also left to peasants, rather than soldiers. It can safely be called a 'military' passageway for it connected the

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\(^{146}\) AEL, Etats, inv. nr. 2974, Petition 10/4/1756.

\(^{147}\) Kaisin, Annales historiques, 125, 127, 154, 345.


\(^{149}\) RHCL, 04.01 inv. nr. 81; Mengels, Chronyk, 45-46.

\(^{150}\) Harsin, 'Etudes sur l'histoire économique', 89-95.
fortresses of Mézières with Picardy. The road's essential characteristic was therefore that it ran parallel to the frontier, which allowed defensive forces to react to enemy movement without giving them any advantage.\(^{151}\)

Armies ultimately responded to the movement constraints posed by land roads as well as rivers, such as the Meuse, by constructing channels (and later railroads as well). Channels provided a relatively easy, and economical, way of transportation, just as rivers did, but their straight outline and constant water level made them much more reliable in terms of navigation. Of no less importance is that these same characteristics also made them much easier to defend. What we see here is a combination of military and economic goals, or at least the assumption that military and economic objectives can be complementary, in a way that resembles military concern with horse supply (see 5.2). The Fossa Eugeniana (1626-1633) and Le Canal du Nord (1806-1810) for example, both of which were never finished, aimed to divert traffic from the Meuse and Rhine Basins, and therefore the Northern Netherlands, towards the Scheldt Basin (Antwerp). Yet at the same time these channels constituted a military defence line, a potential frontier. This is especially obvious in the Fossa Eugeniana because intermediate forts were built to defend this channel, and soldiers had an active role in its construction. The Zuid-Willemsvaart (built in 1822-1826), on the other hand, ran parallel to the Meuse River and created a relatively swift and reliable transportation route between the strongholds of ´s Hertogenbosch and Maastricht.\(^{152}\)

Such waterways might look as the perfect alternative for the relatively unpredictable Meuse River, but they created problems of their own. Channels drain water from surrounding areas, especially the rivers they are connected with, and in this way make the latter even more difficult to navigate. In 1460 for example the citizens of ´s Hertogenbosch dug a channel near the fortress of Nederhemert, on the frontier of Brabant and Guelders, between two arms of the Meuse River. Creating this new passageway isolated the aforementioned fortress, a fief of the duke of Guelders, but also served to avoid Heusden's toll stations. The city council of Heusden still complained that it made the Meuse impassable in the inquests of 1494 and 1514. Communities obviously wanted to convince their ruler that the tax burden should be

\(^{151}\) *Reglement Service de la Cavalerie et des dragons en campagne*, 141-143, 209-210; Girard d’Albissin, *Genèse de la frontière franco-belge*, 346-347; Manceau, 'Un projet'.

lessened, but that does not mean that the grievances put forward in such documents were unfounded.\textsuperscript{153}

The grievances of the city council of Heusden can be seen as emblematic for environmental problems near the Meuse estuary. The cities of Rotterdam and Dordrecht had in the Middle Ages almost direct access to the sea. By the sixteenth century processes of land reclamation and the silting up of significant parts of the Meuse had made this contact increasingly problematic. Defence of the sea, 'the most important frontier of the Republic', rested mainly on warships, but exactly these ships found it increasingly difficult to navigate the Meuse estuary.\textsuperscript{154} Such problems were not just the result of ecological processes; they were aggravated by an increasing divergence between warships and other vessels during the seventeenth century. The pressing need to carry more guns, symbolised by the adoption of so-called ships of the line, necessitated the creation of larger vessels.\textsuperscript{155} The Admiralty of the Meuse, tasked with defending the Meuse estuary, therefore had to turn Den Briel/Brielle into its main harbour, which was connected to the Brielse Maas in 1607. By 1650 even this forward post had to be replaced by new docks in Willemstad and Hellevoetsluis.\textsuperscript{156}

Armies valued wilderness because it served as a barrier, but at the same time its very naturalness made movements, especially counterattacks or other offensive strategies, problematic. Rather than adopting an entirely defensive attitude towards frontiers, or abandoning wilderness as protective elements, armed forces ultimately came to their own unique solutions to solve the tension between road networks and wilderness, movement and blockades: they created their own artificial 'wilderness'. The most famous example of such an attempt is the Hollandic Water Line.

The term Hollandic Water Line refers to a series of inundations that had to safeguard the core of the Dutch Republic, the County of Holland, if an attacker managed the invade the country. It effectively gave new meaning to the image of the \\textit{Hollandsche Tuyn}. Its basic conception originated in the desperate year 1672, when French and Münster troops overran large parts of the Republic. It is only in later years that Dutch engineers developed a more complicated system of sluices and access dikes that allowed commanders to inundate specific areas and defend a handful of access points. The essential aspect of this Hollandic Water Line, or Lines, for one should distinguish between the Old (1672-1795) and New Hollandic

\textsuperscript{153} Enqueste ende informatie (1494) 196; Informacie up de staet faculteyt ende gelegentheyt, 433; Hoecck et al. (eds.), Kroniek van Mollius, 118-119; Hoppenbrouwers, 'Een middeleeuwse samenleving', 23.

\textsuperscript{154} The North Sea is called the frontier (\textit{het frontier}) of the most prominent provinces of the Republic in a petition from 1756. Cited in Krayenhoff van de Leur, Militair-historische schetsen, 89-92. de Jong, \textit{Staat van oorlog}, 65; Denessen, 'Twee havenuitdiepings-projecten; van Hoof, 'De kustverdediging'.

\textsuperscript{155} Bruijn, \\textit{Varend verleden}, 81-84, 92, 95-97, 102-103, 216, 184-185.

Water Line (1815-1956), was therefore that large stretches of land had to be prepared for a potential inundation, but were not flooded permanently. Their long-term ecological significance, which continues to this very day, lays in the preservation of large wetlands or marshes that would otherwise have been drained and turned into agricultural fields, rather than the handful of years the lands were effectively flooded.\textsuperscript{157}

The French government by contrast adopted its own equivalent of the Hollandic Water Line, based on the preservation of woodlands near frontiers. This policy developed only gradually. The marquis de Langeron, a French general, left an account of an inspection tour along the French frontiers in 1773-1774, meant as an educational opportunity for his young son, on how to follow in his father’s footsteps. When he passed near the Forêt de Mormal he remarks that it is a good thing that the count de Nicolaï, marshall of France, prevented the \textit{grand maître des eaux et forêts} from constructing a major road through these woodlands. It would have facilitated an enemy invasion.\textsuperscript{158}

In 1776 the king of France passed an official regulation, which gave military engineers far-reaching powers to prevent anyone from creating new passageways in frontier zones, which included the entire French controlled part of the Meuse Region, without the approval of a special commission (\textit{la Commission Mixte des Travaux Publics}), dominated by military engineers. Giving that any significant clearing of woodlands would create a potential invasion route, the French military had a primordial role in the conservation of forest belts alongside France's borders, which are clearly observable even today. These landscapes, symbols of European 'wilderness', are the result of a deliberate policy based on military perceptions of frontiers that date back to the Middle Ages at the very least.\textsuperscript{159}

2.2.3 Providing Garrison Services

Up till this point we have considered frontier landscapes in terms of access, and more particularly defence against a potential enemy attack. Armies interactions with frontier landscapes also included a set of influences, however, that were not directly related to defensive needs, and might occasionally even run contrary to them. These will be referred to as 'garrison services' because of their essential role in sustaining military presence. The French engineer de Vauban speaks of a \textit{place forte}'s need for \textit{dépendances}.\textsuperscript{160} In order to study the relationship between these services and actual defensive needs, we will first examine the case of the fortress of Montfort, for which source material is relatively abundant.

\textsuperscript{158} Vallée, 'Le journal', 168-169.
\textsuperscript{159} Ordonnance Corps du Génie (1776), 30-31, 43; Dubois and Renard, 'Forêts et frontières', 34-41; Dubois, 'Les forêts'; Reitel, 'L’influence militaire', 77-81; Reitel, 'Le rôle de l’armée', 143-148.
\textsuperscript{160} Mourroux, ‘Stenay, ville militaire', 48. See also de Waha, ‘Château et village'.

Besides from a series of accounts, the oldest of which date back to 1294-1295, a map drawn by order of the Habsburg government has been preserved, which gives an exceptional depiction of the landscape in the early seventeenth century (see figure 2.8).\footnote{161}

Figure 2.8 Map of the lordship of Montfort (detail), drawn by the engineer Philippe Taisne in 1625 (AGR, Cartes et plans, nr. 73, Carte topographique et figurative de la terre, la seigneurie et château de Montfort, avec les villages de sa dépendance, dressée, en vertu d'ordres de la Chambre des Comptes de Ruremonde, par l'ingénieur Philippe Taisne, en 1625).

Henry of Guelders, former bishop of Liège, founded the imposing fortress of Montfort on the right bank of the Meuse, close to Maaseik, in the 1270's. It quickly became a key fortress in the defence of the duchy's southern frontier because of its function as a seat of government. The lordship of Montfort is a classic example of what English medievalists have recently called 'lordly' or 'elite' landscapes; lands filled with symbolic elements of power.\footnote{162} Several brooks in the area were deliberately channelled towards this fortress to create huge fishponds, and the lordship also contained several forests, the most important of which was the Echterwald, located on the Guelders-Jülich frontier between the towns of Echt and Vucht. Landscape elements such as ponds or woodlands can be considered as status claims since access to game and freshwater fish was a social privilege. It was also a rather uneconomic

\footnote{161 Coenen, 'Kasteel Montfort'; Meihuizen, De rekening.}
\footnote{162 See for instance Herborn and Mattheier (ed.), Die älteste Rechnung, 96, for a diregarden (hunting park) close to the house ('castle') of Kaster. Creighton, 'Castle studies', 5-17; Creighton, Designs Upon the Land; Hansson, Aristocratic Landscape, 77-86; Liddiard, Castles, 97-121.}
way of land use. The owner of such lands showed that his socio-economic base was so secure that he could afford to use his lands for display rather than agriculture.\textsuperscript{163}

It has become common practice to use this concept of elite landscapes to question or at least downplay the military role of medieval fortresses ('castles'; see 3.1), but the example of Montfort demonstrates that this is an oversimplification. There is no reason why a landscape feature such as a fishpond, which had obvious prestige value, could not have had a defensive role as well. In the case of Montfort, the fishponds were so extensive that a direct attack on the east side of the fortress would have been impossible. The chronicler Jean de Stavelot also wrote that in 1436 urban militiamen from the Prince-Bishopric of Liège first had to drain the ponds next to the fortress of Bossenove, near Rocroi, before they could assault it. This task took no less than three days.\textsuperscript{164}

By the early seventeenth century, when the engineer Tassin drew a map of the lordship, the landscape had changed markedly in many respects, a situation also reflected in inspection reports. The Echterwald was at this point the only major forest remaining in the area; the others had become simple heathlands. Several of the ponds now fell dry during the summer months, at which time the local population used them for pasture. Overexploitation was a major cause of the degradation of this elite landscape, but it cannot be seen in isolation from fifteenth- and sixteenth-century political events: the fortress no longer served as a ruler's residence, the subjects of the Count of Jülich diverted one of the brooks supplying the ponds with water, and the lordship had suffered repeatedly during invasions. The impoverishment that resulted from these wars forced stewards to use lands in a more productive way. The deathblow to the last vestiges of the original lordly landscape came in 1650-1653 when soldiers stationed in the fortress dug a channel that drained the last remaining ponds.\textsuperscript{165}

The slow growth of the lordship's permanent military presence might have had an essential role in bringing about these landscape changes. The eldest surviving accounts of the duchy, from 1294-1295, indicate that the high bailiff tasked with defending this fortress had at his disposal five knights doing guard duty because of feudal obligations, two gatekeepers, two sentinels, five watchmen, a crossbow maker and his son. A 'garrison' of sixteen grown men and a child in times of war might seem wholly inadequate, but it is very much in line with the ways most fortresses were managed up to the late sixteenth century (see. 5.1). If an actual threat was imminent the garrison could easily be augmented to hundred men and more.

\textsuperscript{163} Coenen, 'Een kasteel'; Coenen, 'Kasteel Montfort'.
\textsuperscript{164} Coenen, 'Kasteel Montfort', 76-77; Coulson, Castles, 72-76; Creighton, Designs Upon the Land, 80; de Stavelot, Chronique, 365-366.
\textsuperscript{165} Coenen, 'Kasteel Montfort', 86-91; Coenen, 'Het keerpunt'.

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A garrison of about eighty soldiers was only established around 1578, and later expanded to about two hundred.\footnote{166} These soldiers actively contributed to the overexploitation of natural resources by fishing in the moats, digging peat, and probably hunting as well. This behaviour would have been quite similar to that of their medieval predecessors, the main issue being that they were far more numerous. Archaeozoological research of animal remains in Franchimont, a fortress located in the Prince-Bishopric of Liège with a similar strategic role, suggests that game, especially red deer and wild boar, constituted a significant part of its occupants' diet in the late fifteenth and early sixteenth century. According to the bishop's regulations from 1503 the household of the castellan residing here should include three horsemen (the castellan himself, his page, and a groom), four infantrymen, a gatekeeper, two sentinels, and two servants (male or female).\footnote{167}

The appearance of large permanent garrisons in most parts of the Meuse Region from the late sixteenth century onwards accordingly contributed to changes in frontier landscapes, as military governors, invariably members of prominent noble families, incorporated these same elements of lordship in the landscapes that they had to defend. A court record from 1660 Namur indicates for instance that the Prince of Chimay, governor of the city, had his own hunting park (garenne) in the forest of Hastimoulin. A local chronicle from 's Hertogenbosch likewise mentioned in the year 1697 that the governor's hunters killed a deer and a wolf.\footnote{168} This reveals that the governor employed gamekeepers to manage his hunting grounds, and that wolf and deer had become so rare in the area that their killing became noteworthy. Soldiers' fondness of hunting could in effect cause considerable damage and friction, with citizens as well as governors, because they rarely respected hunting regulations or private property (see 4.1).\footnote{169}

Complaints about soldiers taking firewood from woodlands near their garrison should be read in a similar light. Providing garrison members with fuel, often coal or peat rather than wood, was the responsibility of the inhabitants in whose houses they lodged, the city council, or the state, but these mechanisms often proved insufficient. Furthermore, the upkeep or expansion of fortifications and military material, notably gun emplacements, required substantial amounts of wood. Military garrisons thus made sure they had access to nearby woodlands.\footnote{170} In one case this even meant appropriating their actual management. The Ravensbosch near Valkenburg originally had an important role as the main forest within the

\footnote{166} Coenen, 'Kasteel Montfort', 86; Coenen, 'Het keerpunt', 95; Meihuizen, De rekening, 8, 15 (text accounts).
\footnote{168} Douxchamps-Lefèvre, Inventaire, vol. 3, 268; van Bavel et al., De kroniek, 414-415.
\footnote{169} NA, Raad van State, inv. nr. 2079, 1/11/1716, 20/11/1716, 17/3/1717, 1/5/1717; Verbois, Rekem, 296; Verschure, Overleven buiten de Hollandse tuin, 199.
\footnote{170} Illaire et al. (eds.), Les cahiers de doléances, 129, 158, 167, 209, 474, 524.
like-named prestigious lordship, and was a major supplier of wood for the garrison of Maastricht. Records kept by the chief engineer in Maastricht demonstrate that he bought trees (oak, ash, field elm) to plant in the forest in 1750, in the aftermath of the reoccupation of Maastricht by Dutch forces, and even had a major role in the establishment of new regulations for the forest's management in 1765. He also had a say in the appointment of new forest wardens. It is significant that in the early nineteenth century, when Dutch soldiers no longer had access to nearby woodlands, the garrison planted coppice wood in the outworks to secure their wood supply.\textsuperscript{171}

Another, and more unexpected need perhaps, was tobacco. Soldiers and sailors were among the first social groups in Western Europe to start smoking in the sixteenth century and are to this day strongly associated with this habit. Numerous paintings from the Dutch Golden Age, in particular the guardroom scenes, attest this (see figure 2.9). In the eighteenth century at least, soldiers were not only entitled to a minimum daily amount of bread, biscuit or meat, but also to tobacco and clay pipes. Garrison commanders preparing themselves for a potential

\textsuperscript{171} RHCL, 07.E01, inv. nr. 1 Guarnisoensboek, B 29/9/1749, 12/1/1750, 16/1/1765, 18/3/1765, 20/1/1768, 1/8/1768, 17/2/1769, 11/5/1769, 22/1/1770, 19/11/1770; inv. nr. 9 1824 nr. 76; Anon, 'Houthem-Sint-Gerlach', 11-14.
sieve even calculated how much tobacco and pipes had to be stored. In this context, peasants living in the immediate surroundings of garrison cities found cultivating tobacco a commercially viable option. The duke of Bouillon even had to forbid the villagers of Sugny, located close to Mézières, its cultivation in 1684 because it would endanger the grain supply.\textsuperscript{172}

Besides wood, game, and tobacco, garrisons also needed access to pasture for their horses. Because of the sheer volume of fodder consumed, cavalry forces typically stayed in regions with ample access to grasslands. The French government stationed a disproportional part of its cavalry forces in the Meuse basin from the seventeenth century onwards because the river valley provided extensive pastures for their horses. In 1789 ten of the sixty-one French cavalry regiments had garrisons in the Meuse Region. Frontier cities and towns for their part were quite content to receive them because they could sell their hay to the military and use the horses' manure to fertilize their fields. The city of Rocroi went so far as to build new barracks and stables at their own initiative in 1721.\textsuperscript{173}

Still, the intensive use of the Meuse and Sambre valleys by French cavalry units might have had other unintended results. Military consumption of hay and pasture would have removed a powerful incentive for local peasants to drain these areas and turn them into agricultural lands, thereby slowing down population growth in these areas. A 1693 plan to drain the meadows of the Sambre valley in order to use these fertile lands as agricultural fields was never executed because it would have prevented mounted regiments from garrisoning or even assembling in this area.\textsuperscript{174} In sum, military management of frontier landscapes produced significant ecological results because it contrasted with agricultural or economic needs.

2.3 MILITARY TRAINING

2.3.1 From Martial Games to Military Drill

After examining how armed forces perceived and managed frontiers in a general way, we will now turn to one specific aspect of frontier management: military training. This particular feature of army-ecosystem interactions at landscape level deserves to be examined separately


because it plays a key role in claims that today's military forces have become protectors of nature. It also draws attention to a neglected feature of military history, for few authors have devoted serious attention to how medieval and early modern armies prepared themselves for war; that is, beyond commenting on the adoption of 'drill'. Military training is defined here as any activity that aims to prepare someone, or a group of people, for warfare. Since this thesis is specifically concerned with frontier landscapes, the main emphasis will be on weapon handling and unit manoeuvres.

Frontiers are an obvious place for military training, because relatively few people live here, armed forces are already present in these areas, and the chance that actual fighting will take place is relatively high. Military training can also be initiated to intimidate an antagonist, or to show off an alliance, in a way not dissimilar to joint U.S.- South Korean military exercises in recent years. It reinforces the perception of frontiers as a 'frontline' by sustaining and intensifying alleged distinctions between the 'self' and the 'other', differences which could later justify the breaking of taboos during actual armed conflicts (notably killing other human beings).

These kinds of advanced and very visible group exercises are quite distinct of what can be referred to as 'basic training'. Such individual and small-scale exercises lacked a specific connection with frontiers. A fifteenth-century miniature for instance, made in the Burgundian Netherlands, depicts a siege camp in which a horseman charges a puppet (see figure 6.9). This activity, known as the quintaine, could be held in almost any open space, including, in all probability, a castle yard. The name is noteworthy because it suggests continuity with Roman military training practices: the fifth row of a Roman camp was reserved for training (quintana via). Medieval illuminated manuscripts of Vegetius' *De Re Militari* often show the quintaine alongside the training practices mentioned in the text. Other kinds of basic training took place in any convenient place or in a special building. A notarial act from Rotterdam, dating to 1645, mentions that three officers of an English regiment of foot practice drill in an inn. Many cavalry units likewise had their own manèges, often located on one of the fortifications' bastions.

Because large sections of a population could be called upon to serve in an armed capacity, military training became incorporated in other activities. In the Middle Ages in

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175 One the few exceptions is Houlding, *Fit for Service*. For a detailed study of military manuals, see Kleinschmidt, *Tyrocinium Militare*.


177 SAR, ONA, inv. nr. 344, nr. 196 03/04/1645; Barbe, 'Rocroy', 123-124; Bruggeman and van Tiel, *De getrokken en bereden eenheden*, 22; Sartelet, *La principauté*, 91; van der Heijden and Sanders (eds.), *De levensloop*, 131.
particular preparation for war often assumed the form of 'games' or 'sports'. The Rule of the Order of the Templars (1128-1129), which served as a model for other military orders as well, specifies that a member of order could engage in target practice, but was not allowed to wager any objects of value. He could also participate in buhurts, informal mounted combats in which the participants were often unarmoured, but only if the commander was present. The Templars were a monastic order of fighting men. Military training was thus an important part of their lives, but the leisurely elements normally attached to it were not acceptable and forcefully removed or restricted.

The rules regarding hunting confirm this impression. There is no doubt that hunting and warfare are directly linked to each other, and that hunting skills can be quite useful in warfare (the killing of other living beings, arms handling, riding, tracking, acting as a group, etc.), but there was a world of difference between falconry and killing dangerous animals. Members of the Templar Order were therefore only allowed to hunt lions, or accompany hunting expeditions when a Christian might be endangered. Hunting for pleasure, especially falconry, was strictly forbidden. Brothers of the Teutonic Order could likewise hunt large carnivores such as the wolf, bear, lynx, and lion, but were forbidden to use dogs. They could also shoot birds as target practice. The tension between these men's religious and military status gives an exceptional perspective on the general assumption that hunting served as training for war. Hunting, or poaching, was a crucial part of interactions between armies and ecological systems in the Meuse Region, but army members often saw it as a pastime, a status claim, or a means to procure food. This is why hunting within the military orders was limited, at least theoretically, to activities which closely resembled actual warfare.

The development of formal military training might in effect have put further pressure on the close association of hunting with preparation for war. The prince de Ligne, a member of the oldest and most prominent noble families in Hainaut, and a general in Habsburg service, criticised existing practices in 1780 when he wrote that ‘you do not tell a recruit: I will make you a hunter, you have to take him from the woods’. In the late eighteenth century 'hunter' (Jäger, jager, chasseur) had become a general name for a particular kind of unit, 'light troops' that typically wore green uniforms and might be armed with hunting rifles, but were apparently not necessarily composed of men with extensive hunting experience. A handful of

178 Contamine, La guerre, 362-363; Corrsin, Sword Dancing, 6-7, 19-25, 28-29, 43, 49; Kleinschmidt, Tyrocinium Militare, 27-29; Mehl, Les jeux, 58-59, 63-64, 194, 256; Paquay, 'De Michielen', 162-164; Settia, 'Military Games'.
179 Curzon, La règle du Temple, 84, 183-184 (rules nr. 95, 315 and 317); Forey, The Military Orders, 192-193.
180 Perlbach (ed.), Die Statuten des Deutschen Ordens, 47 (rule nr. 23); Serdon, Armes du diable, 50-51.
units did establish a strong connection with forestry departments, but for these specialist units
replacing wartime losses was a major problem (see 5.3). 181

The association of hunting with woodlands and mountains, wilderness, is hardly a
coincidence. It demonstrates that the ambiguous perception of frontiers as both wilderness
and barriers of gardens is omnipresent in military training practices as well. Preparation for
war, especially arms handling, is a very disruptive activity. The choice for particular practice
areas close to or within frontiers is therefore closely related to the ways armies cooperated
with society at large. They could opt for sparsely populated lands (wilderness), or close off
their exercise fields from local inhabitants (gardens).

2.3.2 Weapon Handling as an Event

Studying military training in a historical context can be problematic, as argued above, because
arms handling is a skill that large parts of the general population would be expected to master.
The available sources are therefore biased towards more large scale and notable military
exercises, many of which included significant performance elements. The main issue from an
ecological perspective is how important such events actually were in the long-term evolution
of frontier landscapes. Their effects might be quite similar to that of actual battles, except that
killing one's adversary was not the primary goal.

The eldest medieval tournaments, in the late eleventh and twelfth century, were
indeed very hard to distinguish from real combat: they included fighters on horseback and on
foot and there were very few rules. The well-known chronicle of Gislebert of Mons (c. 1150-
1125) makes it clear that many of these early tournaments were held in the Meuse Region,
and more specifically on the frontiers of its numerous principalities (e.g. Blagny, Trazignies,
Maastricht). David Crouch has rightly argued that the Northern part of France, and the
Southern Netherlands, including most of the Meuse Region, played a key role in the
tournament's early history. 182 One of the earliest occurrences of the word tournament, of
French origin, in the German language comes from the 'Eneide' (1170-1190), an adaptation of
the legend of Aneas, written by Hendrik van Veldeke, a ministerialis from the County of
Loon. Even in the thirteenth century, when tournaments became more 'urban' in character,
they were still held in frontier areas (e.g. Andenne, Geertruidenberg). 183

Tournaments were organised on or near frontiers because of their political
significance, but also took the presence of major roads, and the ecology of frontier landscapes

181 de Ligne, Fantaisies militaires, 110.
182 Crouch, Tournament, 27-29, 49-50, 124-125; Jackson, 'Das Turnier', 257-260; Neumeyer, Vom
Kriegshandwerk zum Ritterlichen Theater, 36-57.
183 de Behault de Dornon 'Un tournoi à Mons', 386-391; Janse, 'Toernooicultuur', 153; Janssens,
Hendrik van Veldeke, 66-71; Poncelet, ‘La guerre’, 277; van den Neste, Tournois, joutes, pas d’armes,
67-68, 80; Willems (ed.), Rymkronyk, 49-51.
into account. A horse hove exerts a force more than six times greater than a human heel on a level surface.\textsuperscript{184} One can imagine the effects of a few hours of martial play with hundreds of horse hooves moving about on carefully tended agricultural fields. It is for good reason that many tournaments were held after the harvest was brought in, or even better, on land of relatively low value. The tournament of Chauvency (1280), arguably one of the most famous tournaments of the entire Middle Ages, was held in the river valley of the Chiers, between the city of Montmédy and the fortress of Chauvency, according to the verses of Jacques Bretel (1285). Such open grasslands were the most convenient place to organise a tournament; they were not enclosed and served simply as pasture and for hay production.\textsuperscript{185}

By the fourteenth century the tournament proper, the melee or the charging of two groups of knights at each other, had all but been surpassed by the individual joust. Most tournaments were now held within cities, and group combat subsisted as only one part in a series of competitions. This should not be taken to mean, as has often been claimed, that tournaments lost their military relevance altogether. When Charles V came to the Netherlands in 1549 to present his son, Philips II, as his successor, there were both huge public activities, such as a mock battle outside Brussels, and still large scale, but more private forms of spectacle, such as the storming of a ‘castle of love’ in the hunting park of Mariemont (Hainaut). The latter performance is particularly revealing because the young prince is portrayed as an ideal successor surrounded by noblemen from all over the Habsburg Empire in the context of a controlled space (a hunting park and gardens), which just happen to serve as symbols for the unity of one’s own territory. It should also be stressed that while all this might seem more like theatre than military training, the front of this castle was composed of bricks, and it was attacked under the direction of an engineer by using noble cavalry as well as infantry and artillery. It can be very difficult to distinguish theatrical elements from practical military needs, and the question remains to what extent contemporaries actually made such distinctions.\textsuperscript{186}

The tournament of 1549 establishes a useful link between medieval tournaments on the one hand and early modern military training exercises on the other. Despite the supposedly 'revolutionary' character represented by the adoption of drill in the late sixteenth and early seventeenth century, particularly in the Dutch army, there is relatively little evidence for how armies practiced unit manoeuvres. A new kind of military handbook made its appearance in this period, one that stressed the importance of drill and provided numerous

\textsuperscript{184} Liddle and Chitty, 'The Nutrient-Budget of Horse Tracks'.


illustrations to accompany the text, but it is quite unclear to what extent such manuals represent actual practice. The treatise of Jacob Wallhausen (1615) for example depicts soldiers performing manoeuvres in open fields. David Parrott and Erik Swart have stressed the informal character of contemporary military training, which was based on experience rather than formal drill.\footnote{Parrott, \textit{Richelieu's Army}, 38-48; Swart, 'De mythe van Maurits en de moderniteit'.} Nevertheless, a notarial act from 1652 Rotterdam, concerning a soldier who refused to follow orders, does mention that the unit to which this man belonged exercised outside the walls, the same spaces Habsburg and French forces utilised for their military reviews.\footnote{SAR, ONA, inv. nr. 452, nr. 44 01/10/1652; Boonen, 'Maaseiker soldeniers en huurlingen', 11; Callot, \textit{Les Grandes Miseres et les Mal-heurs de la guerre}, depiction of a military review; von Adlersfels-Ballestrem (ed.), \textit{Memoiren}, 11, 21.} It is useful to note that open fields or heathlands regularly served as background for target practice as well, even though permanent shooting ranges existed from at least the fourteenth century. The citizens of 's Hertogenbosch for instance dragged a newly casted gun to the heathlands and marshes outside the city in 1545 in order to test it, according to the city's accounts.\footnote{Soest, MD, inv. nr. 00013220, 00013221, 00013222, 00013223, 00013224 Oefening op de schietschijf, ca. 1590; van Zuijlen, \textit{Inventaris der archieven}, vol. 2, 626.}

![Figure 2.10. Plan of the practice mines made by the miner company of the Baron de Breda at Maastricht, 1755 (NA, 4.VTH Kaarten Hingman, inv. nr. 3603 Plan van de exercitie approches der compagnie van den kolonel Baron de Breda, tegen het bastion Dauphin te Maastricht).](image)
In exceptional cases the fortifications themselves became the focus. Two maps from the second half of the eighteenth century have been preserved, which depict mock sieges involving members of the Maastricht garrison. The soldiers dug trenches or offensive mining galleries against the fortifications of the city and the outlying fort Sint-Pieter. The inset of one map, dating to 1755, suggests that some explosives were actually placed and detonated to examine their effects on the walls (see figure 2.10). Such exercises must have been conducted in the French army as well, for an entry in the records of the French Invalides from 1770 concerns a miner who was wounded during 'war manoeuvres' at Verdun. This garrison founded its own military miner school, also in 1755. Such siege training should be considered exceptional, however, since in most circumstances simple maintenance of a fortress' defensive mining galleries was considered sufficient exercise. Military commanders were probably very reluctant to deliberately damage structures whose basic maintenance was already quite expensive. Fortifications that had lost their military value served as a practical alternative in some cases. The Prussian artillery for instance used the citadel of Jülich for target practice in 1860.

The connection between military exercises and city walls, the city's 'frontiers', was mirrored at a much larger scale by the establishment of large training camps on state frontiers from the late seventeenth century onwards. The establishment of these camps should be seen in the context of a significant growth in army size in 1660-1760, which made it necessary to practice manoeuvring with larger forces. Surviving reports and plans demonstrate the intention of training soldiers in camping and foraging as well as military manoeuvres in the strict sense of the word (including mock battles, sieges, and bridge building). Camps were typically pitched in grasslands or heathlands, but with access to running water. The French army thus established training grounds next to the Sambre, near the village of Aymeries, in 1727, 1732, 1753, 1754, and 1755. As surviving maps indicate, these areas were sparsely

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190 NA, 4.GYF Geyler/Kaarten, inv. nr. 41 Maastricht. Plan van een attaque tot exercitie van het garnizoen voor het fort van St. Pieter (undated); 4.VTH Kaarten Hingman, inv. nr. 3603 Plan van de exercitie-approches der compagnie van den kolonel Baron de Breda, tegen het bastion Dauphin te Maastricht, 1755.
193 BNF, Département Arsenal, MS-6452 (456) Plan particulier des environs du camp d'Aymeries sur la rivière de Sambre en sept. 1727; MS-6452 (457) Carte du camp d'Aymeries commandé par Mr. le Prince de Soubise le 1er septembre 1753; MS-6452 (458B,1) Plan du camp d'Aymeries commandé par M. le Prince de Soubise au mois 7 breve 1754; MS-6452 (458B,3) Plan du fourage fait au camp d'Aymeries le 8 septembre 1754; MS-6453 (461) Plan du camp d'Aymeries commandé par M. le Prince de Soubise depuis le 27 aoust jusqu'au 25 7 breve 1755; MS-6453 (462) Argenson, Antoine-René de Voyer, marquis de Paulmy d', Journal du camp d'Aymeries, commandé par Mr. le P. de Soubise,
populated, and therefore easy to rent or appropriate, and provided the necessary wide-open spaces (see figure 2.11). The soldiers even had to flatten the prospective sites so that no obstacle would impede manoeuvres. Yet all this made these encampments also vulnerable to sustained rain showers and the resultant flooding. The Dutch training camp in Oosterhout, organized in the heathlands near Breda in 1732, had to relocate two times because of incessant rain and the flooding of the campsite, and was eventually broken up prematurely.  

![Figure 2.11 Plan of the encampment at Aymeries in September 1754 (BNF, Département Arsenal, MS-6452).](image)

Because campsites were chosen for their strategic locations, it does not come as a surprise that some of them were held near or even on actual battlefields. When Walloon regiments of the Imperial army performed the manoeuvres prescribed by their new drillbook, in 1767, 1768 and 1770, they did so near Jemappes, the same common lands, used as pasture, where they would be defeated by a French Republican army in 1792. While the ecological effects of one encampment or battle would be ephemeral, the focus on specific areas could lead to long-term influences. This would have been especially so if camping involved major landscapes

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lieutenant général en 1755; Département cartes et plans, GE D-16345; Nauwkeurig dag-verhaal van ’t campement bij Oosterhout; Ordonnance Corps du Génie, 43-44; Chagniot, 'Les camps'; Pierrot, 'L'arrondissement de Montmédy sous la Révolution', 18-20; van Nimwegen, De Republiek, 111-114; van Seters, 'Het Campement bij Oosterhout anno 1732'.

194 Nauwkeurig dag-verhaal van ’t campement bij Oosterhout, 3, 21, 23; van Seters, 'Het Campement bij Oosterhout anno 1732', 140.

195 The remnants of two forts (schansen) still visible on the Mookerheide are probably related to these nineteenth-century training practices rather than early modern warfare, as has often been claimed.
changes. Dutch officers of the military academy in Breda for example referred to some artificial hills near the city as the 'English Mountains' at the end of the nineteenth century. They thought British troops had constructed these during the 1793-1795 campaigns against France, while these were in fact remains of Dutch practice camps from 1769 and 1776. These hills served as huge butts to prevent any cannon balls from flying off the range. The published testimony of a corporal of the English foot guards confirms that the British army was not responsible for the hills' construction, but that its members were well aware of their military origin. It is worth noting that both Dutch and English soldiers contributed to the lowering of the ground water level by digging wells in these heathlands, where water was relatively scarce. Even temporary training camps could thus occasionally bring about permanent landscape changes.

2.3.3 The Adoption of Permanent Training Grounds

While many military training practices show a clear connection to frontier landscapes, due to their very transient character they provide little evidence of long-term ecological consequences. The significant aspect of permanent training grounds is therefore that the short-term influences typical for temporary training grounds could produce lasting effects as result of repetition. Although permanent exercise fields became relatively more important during the early modern period, this was hardly a linear and unstoppable evolution as present-day armed forces regularly train outside official military domains.

As far as the Meuse Region is concerned, the appearance of permanent training grounds can be traced back to the creation of brotherhoods or guilds of crossbowmen from the thirteenth century onwards. These were later supplemented by archers, (hand)gunners, and swordsmen's guilds. The earliest surviving charter dates back to 1266 Namur and was granted by Guy of Dampierre, Count of Flanders. Because these men trained regularly, at least once every two weeks, they were considered a military elite; they had a major role in the maintenance of law and order, and served as permanent guards on city walls during conflicts. From an ecological viewpoint, it is important that only a relatively small part of the adult male population engaged in these exercises, in contrast to late medieval England, where every adult male was supposed to own a bow and arrows and practice regularly. The terrains allocated to these associations tend therefore to be described as enclosed spaces (courtils) or

Gossories, 'Souvenirs militaires de Mons', 239-243; Gossories, 'Les grands-prés de Mons'; Kruyse, 'De Mookerheide'; Smeets, 'Heumense schans en Mookerschans'.

Brown, An Impartial journal, 187-189; de Bas, 'De Kalix Berna of Kalbergen'.

Borgnet, Histoire, 4-6, 14, 26-27, 43-44; Devillers, 'Notice historique sur la milice communale'; Mehl, Les jeux, 59-63; Piérard, Les plus anciens comptes, vol. 1, 285; Serdon, Armes du diable, 46-50; Thewissen, De gezworen schutterijen; van der Eerden-Vonk, Raadsverdragen, 162-163.
gardens (see figure 2.12)\textsuperscript{198}, while in England target practice usually took place on common lands and frequently led to the massive destruction of gardens (enclosures).\textsuperscript{199} These shooting ranges, which could contain fruit-bearing trees and vines, were often located just inside or outside the city walls, the city's 'frontiers', mostly in dry moats, especially if these ditches had lost their original function due to the expansion of the fortifications. One of the crossbowmen companies in Dinant practiced shooting at the foot of the city walls, the other in part of the dry moat, according to the city's cartulary.\textsuperscript{200}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.12}
\caption{Target practice in the garden of a crossbowmen's guild, miniature from the early sixteenth century (BRB, ms. II 158 Livre d' Heures, November, f. 11 v.).}
\end{figure}

Safety was probably an important consideration as these associations were often granted special privileges to ensure that they could not be held responsible for any accidents. From the late fourteenth century onwards it became increasingly common to shoot at a wooden bird (a 'parrot') on top of a pole rather than at wooden marks because it was safer and required


\textsuperscript{199} Andrews, \textit{Historic Byways and Highways}, 113; Gunn, 'Archery Practice', 53-57, 63.

less space. The eldest reference to such a bird comes from the 1384 accounts of Venlo.\textsuperscript{201} Shooting guilds lost most of their military importance over time, but continued to exist until their disbandment in the late eighteenth century. The new Netherlands government re-established them in 1815 and it is useful to note that some of them again occupied grounds near their city's fortifications.\textsuperscript{202} Garrison cities such as Namur and Maastricht constituted an exception, for here shooting guilds had been disbanded much earlier, sometimes as early as the late sixteenth century, as unwanted competition of regular military units.\textsuperscript{203}

The relative decline of such militias corresponded with a more general shift towards paid troops, 'soldiers'. It is unclear where these men trained, and whether they occupied a specific terrain for such purposes, before the eighteenth century. The garrison orders of Namur are one the few sources to provide very detailed information. They indicate that the infantry, artillery, and cavalry, more or less had their own drill grounds in 1759-1761. The cavalry exercised in the open fields outside the Porte de Jambes (near the like-named village, to the south-east of the city), the artillery next to the Meuse, outside the Porte Saint-Nicolas, and the infantry mostly outside the Porte Bulet (see figure 2.13). This does not mean that access to suitable grounds was easy. The garrison had to pass review in April 1761 outside the Porte Saint-Nicolas instead of Porte de Jambes, for example, because of obstruction by the city council. The governor complained to that same body in 1771 and 1772 that owners of the training fields near Jambes not only sowed them, but that one man even turned his lands into a garden (that is, he enclosed it). Apparently the sowing had been allowed earlier only as a special favour.\textsuperscript{204}

The governor's opposition to field enclosures was reminiscent of an earlier conflict, in 1749, shortly after the Dutch garrison reoccupied the city. The governor wanted to establish training grounds large enough to accommodate the entire garrison, and demanded access to the Plaine de Salsinnes, to the west of the city, near the castle, which in his view were common lands and therefore suitable for military training. He also argued that the garrison already used them for military exercises before Namur was lost to the French in

\textsuperscript{201} de Groot, \textit{De stadsrekeningen}, 1384 f. 9.
\textsuperscript{203} Denys, \textit{Police et sécurité}, 118-130; Thewissen, \textit{De gezworen schutterijen}, 251-256.
1745. Internal correspondence reveals that Dutch officers preferred to use this plain to prevent citizens from constructing earthen embankments with hedges or dig out ditches, which would facilitate an attack on the castle. The governor got his way and a training field was established, but it remained property of individual citizens. The aforementioned references to the garrison orders of 1761 prove that the Dutch army eventually did lose access to these grounds and that such conflicts over land use were not durably solved.205

The garrison of Maastricht meanwhile experienced similar problems. In 1790 it reached an agreement with a citizen named J.M. Theelen, who leased the right to cut the grass on the fortifications, to use fields next to the walls for training purposes. The soldiers could train there before the harvest, from February until the first half of May, for five years. Yet the contract also specified that cavalry units could not enter them. The leaseholder was evidently well aware that this would result in far more extensive compaction of the soil. In order to provide their cavalry with suitable room for manoeuvring, the garrison thus appropriated about six hectares of land in Amby, a village to the east of Maastricht, that very same year. This land, known as the Geuselderenbroek, consisted of a significant part of the village’s common lands as well as some meadows owned by major landowners. Its extensiveness also made it suitable for advanced manoeuvres with all infantry regiments together. Detailed fiscal accounts have been preserved, which demonstrate that, since charging on marshy ground is

205 NA, Raad van State, inv. nr. 2598 Plaine de Salsinnes.
very difficult for cavalry units, soldiers turned them into suitable training fields by flattening
the soil and digging drainage channels. The only concessions made to the local populations
consisted of allowing them to pollard the trees on the edges of the field and pass through with
their wagons or carts, but only outside the drill season, and all tracks had to be levelled
again.206

![Figure 2.14 Sketch of the drill square in 's Hertogenbosch, view from the citadel, 1820's (BB,
EK 2008/400, Skizzenbuch August von Bonstetten, f.43).]

While military administration comments on changes in landscape use, it does not reveal how
specific species were affected by or adapted to these alterations. Fortunately, two botanical
studies from the nineteenth century provide some indication. The first reference comes from
Commercy, where in 1840 trailing st john’s-wort (Hypericum humifusum) could be found on
the champs de manoeuvres. The second reference is provided by the flora of F.J.J. van Hoven,
a medical officer serving in the Dutch army, of the plants he encountered while staying in the
garrison of’s Hertogenbosch in 1845-1847. He remarks that knotgrass (Polygonum aviculare)
was very common on the drill square. Trailing st john’s-wort and knotgrass are plants that are
not able to endure frequent trampling, but actually thrive under such conditions because they
do not have to compete with other plants. Most military exercises would have been disruptive
to local vegetation, but only regular repetition in a relatively concise space could have
encouraged the growth of such disturbance-resilient species. We actually have a sketch of this
drill square, made by a Swiss officer of the Dutch army, August of Bonstetten, in the 1820's.

206 NA, Raad van State, 2074 Garnizoensorders Maastricht, Geuselderenbroek.
It depicts a very green, almost idyllic field with a non-commissioned officer instructing some recruits (see figure 2.14).  

During the eighteenth and especially nineteenth century military forces increasingly began to feel the need for larger areas where they could practice without causing conflicts, or conversely, be disturbed. These camps served changing military needs, notably an increased emphasis on target practice and more diverse kinds of terrain to practice on. The Napoleonic garrison of Maastricht for example reoccupied the former training grounds of the Dutch army, the Geuseldernbroek. In marked contrast to their predecessors, they also used it for target practice in 1808, which in turn prompted an immediate complaint by the community's mayor to the prefect. The new Netherlands government consequently established several large training grounds on heathlands in the 1820's. The Belgian army followed suit and founded the camp of Beverlo in 1835. This has proven to be one of the most durable training grounds in the Meuse Region. The camp's location, in the middle of the desert-like heathlands and drift sands of the Campine, gained considerable strategic importance in the aftermath of the Ten Day's Campaign (1831), as it controls a major road leading from Eindhoven to Hasselt. It was originally established near the garrison of Diest, but transferred to this desolate wilderness because the lands were inexpensive (see figure 2.15).

Parts of the camp, now military domains, have received protection in the 1990's because of their value for endangered flora and fauna, mostly species that depend on heathlands and drift sands for survival. The ecological value of these military domains is therefore similar to that of other training areas in Western Europe: they preserve landscapes that have become very rare elsewhere due to changes in agricultural practices. The Belgian army's disruptive activities: the trampling of the soil, first by horses now by mechanised vehicles, and the burning of vegetation as result of live firing, more or less ensure that this desert-like landscape does not turn into woodlands. These domains' garden-like character (they are not freely accessible and often enclosed) makes them a safe haven for endangered species as well. While the military deserves credit for this protection, they also made a significant contribution to the disappearance of these same heathlands and drift sands. The Belgian army after all used the labour force of a penal company, the only unit to be stationed...

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210 Koster, 'Origin and Development'; Sterckx and De Blust, *Heide in de vuurlinie*, 16-18; 90-99; Vanschoenwinkel, et al., 'Rediscovery of Branchipus schaeffer'.

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73
permanently in the camp, to turn one hundred and forty hectares of heathland into gardens (one fourth), grasslands (one eighth), woodlands (one half) and plant nurseries (one eighth) in 1847-1849.\textsuperscript{211}

![Figure 2.15 Cavalry patrol in the dunes and drift sands near the Camp of Beverlo, early twentieth century (postcard).](image)

These changes were initially very practical responses to the challenges posed by this landscape: the lack of cover made soldiers' tents and huts very vulnerable to the wind, there was very little or no running water, and food for man and horse alike had to be imported from elsewhere. Soldiers thus planted pine trees to strengthen the soil and shield their encampment from the wind, dug wells, and used their own horses' manure for the fertilisation of these lands. By the 1850's, a new channel and a railroad made the camp more accessible. Such landscape changes considerable raised the status of the army, for it made itself useful in peacetime by turning the wilderness of the Campine into valuable land. But none of the more ambitious programs, such as a horse-raising project, were ever put into practice. Perhaps its most enduring influence will be the city of Leopoldsburg (Bourg-Léopold), created in 1835 because so-called camp followers were not allowed to live in the actual camp; a stringent reminder that the military-civilian divide had now become the norm.\textsuperscript{212}

\textsuperscript{211} The use of a disciplinary company is particularly interesting given two proposed alternatives: soldier-settlers based on the example of the Habsburg-Ottoman frontier or colonization by Societies of Humanitarianism (\textit{Maatschappijen van Weldadigheid}). Brion, 'L’armée'; Delameilliere, 'Het kamp van Beverlo', 61-72.

CONCLUSION

Military domains, rather than being a symbol of progressive behaviour, are actually the isolated leftovers of what once were far more encompassing and diverse strategies of frontier management. Armies in the Meuse Region contributed to landscape variety on frontiers from the thirteenth to the nineteenth century because their actions were well integrated into the fabric of past societies, even though they often opposed economic needs. Military concerns helped preserve some of the last remaining stretches of wilderness from agricultural expansion, as they were efficient barriers against an enemy attack. Conflicts between armed forces and the general population regarding land use were common, but the former felt little need to close off large areas as military domains. Existing agricultural practices, notably common lands, still provided enough room to organize training exercises.

Understanding the historical development of frontiers is indeed quite impossible without taking land cultivation, and perceptions rooted in medieval agricultural practices, into account. The garden-wilderness dichotomy had a profound impact on armed forces' perception of ecological systems, and ultimately on how they interacted with them. A study of such views cannot be based on military maps alone, but also needs to take medieval chivalric romance, and early modern folk tales into account. Such manuscript maps are after all a relatively recent development, originating in the fifteenth or sixteenth century, and only a handful of people had access to them.

Distinctions between gardens and wilderness are rarely straightforward, since humans influenced all landscapes in the Meuse Region to a more or lesser extent by the thirteenth century. Still, the original medieval contrast depicting gardens as enclosed areas, and wilderness as uncultivated land is a very useful one to capture the tension between active and passive defence of frontier landscapes. Limiting human involvement or access to extensive woodlands, marshes, or heathlands created an effective barrier against potential invasive forces. A relative absence of proper roads also complicated offensive operations or a counterattack, however. The Meuse River had a key role as a symbolic boundary marker, but its value as a transport route effectively ensured that it rarely became an actual frontier.

Frontiers embodied both defensive barriers and land suitable for agriculture and/or natural resources (pasture, wood gathering, etc.). These initially had to sustain local settlers that could be expected to defend a ruler's territory, and later on permanent garrisons that took over their military role. While increasing distinctions between armed forces and general society did give states more leeway in imposing control over frontier landscapes, soldiers also contributed actively to the demise of wilderness. They created strategic fortresses, built roads, and required access to pasture, wood, and hunting grounds.
The building and maintenance of strongholds in frontier landscapes represents the second problem of frontier management: an emphasis on concentrated points of defence versus linear barriers. The choice for one of the other relates both to the constraints and opportunities presented by local ecosystems, and the nature of the threat. The makeshift defences instituted by the French state along the Meuse and Semois from the mid-seventeenth to the mid-eighteenth century demonstrate the difficulties of depending on wilderness barriers. The extensive woodlands of the Ardennes deterred most invading forces, but not relatively small and fast moving bands of mounted raiders. The unpredictable behaviour of the River Meuse likewise made defending it problematic.

Military forces, referring to organisations, ultimately responded to these difficulties by taking full control of wilderness in frontier contexts or by creating their own manmade wilderness: the woodlands along France's borders, and the Hollandic Water Line. This closely resembles their response to frictions regarding military training areas. Military training was, and still is, a very disruptive activity: loud, destructive, and often dangerous. This forced armed forces to use either enclosed areas (gardens) or uninhabited spaces (wilderness). Because most preparation for war involved unit manoeuvres, emphasis was placed on large open fields, typically grasslands or heathlands managed as common lands. The trampling effect of hundreds, if not thousands of men's feet and horses' hooves, could do relatively limited damage there.

Developments within armies themselves; a relative increase in scale, and standing forces, combined with modifications in agriculture, notably enclosure movements, stimulated the appropriation or acquisition of permanent training grounds from the eighteenth century onwards. These areas laid the basis for current military domains. They are considered ecologically valuable because the military's disruptive activities preserve landscapes that have disappeared elsewhere, such as heathlands and drift sands, while also providing a refuge for endangered species. Given that such military domains are to a more or lesser degree closed off from the general public, one might say that they preserved wilderness by turning it into a huge garden. Comparing these last refuges with the large stretches of wilderness preserved by historical armed forces gives a somewhat gloomy perspective of ecological conservation today.