Landscape Elements in the Late Medieval Village: Can Information on Land-Use Be Derived from Normative Sources?[1]

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Introduction

Landscapes are an elusive subject, and vast amounts of text have been written about them.[2] However elaborate one might study the word or the concept, landscapes are composites of nature and culture. Even "natural landscapes" are affected by the conceptualizations we make of them because perception is in itself a process of selection that constructs landscape from the whole array of natural phenomena that surround the viewer. By using not landscapes, but rather landscape elements as the unit of analysis, the conceptual fuzz can be resolved: The analysis is in this case confined to terms that can be found in sources from the Middle Ages, and the analysis is based on specific three-dimensional structures, such as paths, fences, field banks and the like.

Having sorted out the conceptual trouble with landscape, the problems with normative sources remain. Social reality and norms could be viewed as opposite ends of a spectrum, but in fact the interplay is

[2] For an overview from the geographers' viewpoint see the well referenced article by Christina B. Kennedy, James L. Sell, and Ervin H. Zube, "Landscape and Geography," *Environmental Review,* 12:3 (1988), 31-56. A recent addition to the wealth of historical essays about landscape is the much acclaimed book by Simon Schama, *Landscape and Memory* (New York, 1995). I do not aim at a reference list of works about landscape. Both cited works can serve as a springboard.

more complex. The approach towards normative evidence taken in this paper does not ask for the "reality" of their content in a direct way. Rather, it will be argued that law is a form of representation of collective perception of the environment and is thus significant for understanding environmental relations in the past.

The main sources this paper rests on are village laws ("custumals"), that are abundant and have been made accessible as to their environmental contents in a database that covers a large part of what is nowadays Austria for the period from the 13th to the 18th centuries. Details are given below, in the chapter on sources.

The question of this paper is also a methodical one on a more abstract level: What can be deducted from a village law about the relations between society and nature? This question is central to environmental history, a developing field of historical research but only marginally concerned with medieval questions so far.[3]

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[3] This footnote is not meant to be an overview of the relevant literature in general, which I have reviewed in Verena Winiwarter, *Was ist Umweltgeschichte?* (Schriftenreihe Soziale Ökologie 54), (Vienna, 1998). See also Verena Winiwarter, "Siedlungskontinuität als Frage des Stoffdurchsatzes? Zum Umgang von Gemeinschaften mit Natur," in Michael Schmaedecke, ed., *Ländliche Siedlungen zwischen Spätantike und Mittelalter. Beiträge zum Kolloquium in Liestal,* (Liestal, 1995), 119-124. A recent benchmark work for Austria is Christoph Sonnlechner, "Landschaft und Tradition. Aspekte einer Umweltgeschichte des Mittelalters," in *Text – Schrift – Codex. Quellenkundliche Arbeiten aus dem Institut für Österreichische Geschichtsforschung,* eds. Christoph Egger and Herwig Weigl (Mitteilungen des Instituts für Österreichische Geschichtsforschung, Erg.-Bd. 35), (Vienna and Munich, 1999), 123-223. More specifically related to this article's theme, "landscape" is dealt with in Dietrich Denecke, "Eingriffe der Menschen in die Landschaft – Historische Entwicklung – Folgen – erhaltene Relikte, in *Von der Angst zur Ausbeutung. Umwelterfahrung zwischen Mittelalter und Neuzeit,* eds. Ernst Schubert and Bernd Herrmann (Frankfurt a. M., 1994), 59-71. Denecke offers a geographical viewpoint, and his analysis is very general. Medieval environmental law has been studied by Heine, but almost solely for its pollution aspects: Günter Heine, "Umweltbezogenes Recht im Mittelalter," in Bernd Herrmann, ed., *Umwelt in der Geschichte. Beiträge zur Umweltgeschichte* (Göttingen, 1989), 111-128; idem, "Umweltschutzrecht aus historischer Sicht – vom Beginn der Neuzeit bis ins 20. Jahrhundert," in *Von der Angst zur Ausbeutung,* 157-184. Still a good overview on all aspects is Bernd Herrmann, ed., *Mensch und Umwelt im Mittelalter* (Stuttgart, 1986). Britain and the Netherlands have received more attention, see, e. g., William H. TeBrake, "Air Pollution and Fuel Crises in Preindustrial London, 1250-1650," *Technology and Culture,* 16 (1975), 337-359; idem, "Land Drainage and Public Environmental Policy in Medieval Holland," *Environmental Review,* 12:3 (1988), 75-93; idem, "Land Reclamation and the Agrarian Frontier in the Dutch Rijnland, 950-1350 A.D.," *Environmental Review,* 5:1 (1980), 27-36.

Law as representation of collective perception

To circumvent the unsolvable riddle of norm and reality I suggest to understand normative sources, regulations, laws in the wider context of the word, as a form of representation of collective perceptions. In this definition, both perception of the natural world and perception of the social realities are subsumed, as their combination yields the perception of what we call "environment" which is then re-presented in the textual reality of the norms. For the purpose of this article, environment shall not be defined using ecological or spatial criteria, but shall be used to denote that part of natural surroundings that is managed or used by human societies and, therefore, within their realm of social and natural perception.

Laws tell us better than any other source, how people looked upon the land. They tell us what these people saw, what they perceived as worthy of a regulation, and how they devised means for regulations to be enforced.

If village laws inform about the collective perception of villagers and landlords, what can actually be found is the contested ground. Both what this contested terrain was thought to be like and how its use was decided about are a theme of the sources. It might be argued that this normative evidence can only be used to analyze the motifs and perceptions of the landlords, as they commissioned the village regulations to be written down and thus had an overarching influence on their content. But village laws were part of the social universe, as they, e. g., were read aloud once a year in front of the community. Therefore, they did in fact shape and reflect perceptions of villagers as well as those of the seigneurs.

Theodore Steinberg has argued that law is actually a form of communication, with its main emphasis on telling others what is your possession.[4] Property in the English language up until the 17th century was understood as a right in something, not as the thing itself. The feudal system was built on *proprietas* and *possessio*, the first being the right in something, e. g. a form of use of the land. The second being the right to the land, albeit under the assumption that the proprietors were to be granted their rights in the land. The village laws comprise regulations of proprietors' rights in land-use as were agreed upon with the holder of the *possessio*.

Steinberg is valuable for the emphasize he puts on law as a form of communication, in our case communication between villagers and

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[4] Theodore Steinberg, *Slide Mountain or the Folly of Owning Nature* (Berkeley, Los Angeles, and London, 1996).

landlords. One should nevertheless be aware of the difference between rights in and rights to the land. Environmental regulations in the village laws are concerned with issues of *proprietas* more than those of *possessio*.

Commons needed to be regulated as well, their regulation followed the familiar pattern. They were conceived as land to which titles were issued and thereafter regulated, but the community as a whole was the proprietor. Regulating the commons can be viewed as a communication about property rights (in the sense of *proprietas*). We have the opportunity to study the village commons – among which agricultural infrastructure is of particular importance – within an agricultural system based on the feudal ideas of property and possession.

Village laws took part in a process of shaping and reflecting the perception of landscape, as was stated above. Law communicates common perceptions and their reinforcement, thus creating and recreating the villagers' and the landlords' landscape. The way things are seen (perceived), in turn, determines – besides the technical means – what is actually done. The realms of ideas and material exchanges are always closely intertwined. The village laws can be seen as the framework setting the boundaries of the possible material interaction with the land. As Allen Pred has pointed out, humans do not only make their histories but they also create their spaces.[5] We are able to follow the process of social creation of space in the feudal village by analyzing these sources.

Sustainable commons or landscape ecology?

The pursuit to understand the "creation of space" has several analytical possibilities.

Steinberg has argued that a culture single minded in private property looses the evolutionary flexibility needed to change its path of development into more equitable and ecologically sustainable directions. This is, of course, an argument directed against those who saw a "tragedy of the commons", arguing that only private property (in the modern sense of the word) could ensure sustainable use of natural resources.[6] But it is

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[5] Allan Pred, *Making Histories and Constructing Human Geographies. The Local Transformation of Practice, Power Relations, and Consciousness* (Boulder, San Francisco, and Oxford, 1990).

[6] Garret Hardin, "The Tragedy of the Commons," *Science* 162 (13/12/1968), 1243-1248. Hardin's arguments have been criticized widely. The newest contribution in this debate comes from Rolf Peter Sieferle, "Wie tragisch war die Allmende?," *Gaia*, 7, No.4 (1998), 304-307.

more probable that in any form of legal construction means of being environmentally disastrous can be devised. The question of "commons" as an instrument of environmental flexibility is wrongheaded for manorial systems, as should be emphasized: Flexibility is embedded in regulations both for the commons and for the lands used in form of a personal lease. By looking into times and places with commons to regulate within a structure of seigneurial tenure one can aim to add a historical point of view to a discourse which is commonly called "the environmental debate". But such an analysis would in the end confine itself to the realm of social perception. By trying to cope with the flows of material and labor needed in space creation we can transcend the boundary to the realm of the natural surroundings, the genuine task of environmental history.

A theoretical framework for dealing with material interactions

It has been suggested in social ecology to understand the relations of societies and nature using just two concepts. Both are set on the material side of the debate. The first relation (or interaction) is called "Societal Metabolism". It describes what kind of and how much material (including energy) are taken from nature and transferred into society and what kind of and how much wastes and emissions are exported from society into nature.[7] The normative sources dealt with in the following are not of much use to clarify that sort of problems. But societies interact with nature in a second, quite different way: Nature is colonized by society. Humans change their environment to make it more useful for them. The first great invention in this realm was agriculture: Nature is changed in a way to yield more of the starch- and protein-rich grass seeds one wants to have instead of producing deciduous trees which one cannot eat. But entirely natural processes make the seeds grow, humans in the process of colonization do not change natural systems as much as they can, but usually as little as necessary, leaving the rest to nature, in this

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[7] The concept of a "metabolism" for societies is widely used in the social sciences, as has been shown in two review articles: Marina Fischer-Kowalski and Walter Hüttler, "Society's Metabolism. The Intellectual History of Material Flow Analysis, Part II, 1970-1998," *Journal of Industrial Ecology* 2, No. 4 (1999), 107-137, the interplay of culture and nature has most elaborately been systematized Rolf Peter Sieferle, "Kulturelle Evolution des Gesellschaft-Natur-Verhältnisses," in *Gesellschaftlicher Stoffwechsel und Kolonisierung von Natur. Ein Versuch in Sozialer Ökologie*, eds. Marina Fischer-Kowalski, Helmut Haberl, Walter Hüttler, Harald Payer, Heinz Schandl, Verena Winiwarter, and Helga Zangerl-Weisz (Amsterdam, 1997) 37-53.

case to photosynthesis and the program for growth encoded in the genome of the grain.

Colonizing natural systems means to interact with dynamic, self-organized, living aggregates, colonization means work, labor. Without regular planting or sowing, weeding, harvesting, and plowing a field, nature will take over again: Shrubs and trees will start to grow, and sooner or later the yield of starch-containing edible seeds will decrease to a value near zero, actually to a value that hunter-gatherer societies would have been able to reclaim using their methods as well.

When the intensity of colonization is increased, more work has to be diverted from actual production to tasks related to production; I will name but a few: manuring, fencing, preventing erosion by terracing lands or planting hedges, and building the needed infrastructure to make agriculture feasible, such as paths and roads.[8]

Asking for colonization can frame the source content with the needed material viewpoint. The principles of colonizing interventions on the landscape level can be investigated in an agricultural, medieval society. From the viewpoint of the environment rather than from society the man-made features that utilized (colonized) landscapes had, can be researched. Combination of this legal evidence with archaeological evidence to render a synthesis of perception and physical remains would be most welcome, but cannot be offered in this article.[9] Yet, the normative sources tell us something about the "standard" landscape and its features, the landscape that was perceived as ordered and acceptable, the landscape that was, however one might think about this word, "normal".

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[8] Helmut Haberl and Helga Zangerl-Weisz, "Kolonisierende Eingriffe: Systematik und Wirkungsweise," in *Gesellschaftlicher Stoffwechsel*, 129-148; Verena Winiwarter, "Gesellschaftlicher Arbeitsaufwand für die Kolonisierung von Natur," in *ibidem*, 161-176.

[9] Landscape archaeology, the discipline to turn to with such questions, is still in its infancy in Austria. Agricultural history can provide helpful insights, such as Bruce M. S. Campbell, "Ecology versus Economics in Late Thirteenth- and Early Fourteenth Century English Agriculture," in Del Sweeney, ed., *Agriculture in the Middle Ages. Technology, Practice, and Representation* (Philadelphia, 1995), 76-110; Robert S. Shiel, "Improving soil productivity in the pre-fertiliser era," in Bruce M. S. Campbell and Mark Overton, eds., *Land, Labour and Livestock: Historical Studies in European Agricultural Productivity* (Manchester, New York, 1991), 51-77.

The Sources

The work presented here relies on a database called the "Environmental History Database Austria, EHDA".[10] It contains legal sources, called "Weistümer", a word that can be translated into "village laws". "Custumals" could be a similarly fitting term. This database was developed in "kleio" as a common venture of Gerhard Jaritz and the author in research projects in the last 10 years and is now available as an access database[11].

The database is built almost entirely on the basis of edited sources. Currently, the village laws from the present provinces of Lower and Upper Austria, parts of the material from Styria and Carinthia and about 50% of the sources from the westernmost province of Austria, Vorarlberg, are included in the database. As for the eastern part of Austria a considerably larger amount of such village laws exists to the present day, the two provinces selected for analysis hereafter comprise a major part of all edited sources. The oldest village laws included in the database stem from the 14th century, and the major part is in the 16th and 17th centuries. Most examples used for this article come from the 15th century.

Questioning the sources

For the interpretation presented hereafter the main questions were:

- How are such landscape elements that serve as or act as boundaries regulated?
- Who is in charge of them?
- What kind of regulations existed?

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[10] Details about structure and use of the EHDA are presented in the following articles: Gerhard Jaritz and Verena Winiwarter, "On the Perception of Nature in Renaissance Society," in Mikuláš Teich, Roy Porter, and Bo Gustafsson, eds., *Nature and Society in Historical Context* (Cambridge, 1996), 91-111; Verena Winiwarter, "Historische Umweltbewältigung," *historicum,* 32 (1993), 36-39; Gerhard Jaritz and Verena Winiwarter, "Wasser. Zu den historischen Mustern eines Problembewußtseins. (Annäherungen anhand der historischen Umweltdatenbank Österreichs)," *Mitteilungen des Niederösterreichischen Landesmuseums,* 8 (1994), 163-174; Verena Winiwarter, "Patterns of Coping with the Environment (14th–18th Centuries). Computer Supported Access to Man's Relation to Nature," in Gerhard Jaritz, Ingo Kropač, and Peter Teibenbacher, eds., *The Art of Communication. Proceedings of the VIIIth International AHC Conference, Graz Austria 1993* (= Grazer Grundwissenschaftliche Forschungen, 1), (Graz, 1995), 515-526.

[11] All inquiries about the database should be directed to: verena.winiwarter@univie.ac.at or gerhard.jaritz@oeaw.ac.at.

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- Are there special regulations for marginal areas?

Colonizing interventions have one important effect on societies, as was mentioned above: They create labor. One of the reasons why one should be interested in such landscape elements is their function in terms of infrastructure. What nowadays is a problem for "marginal areas" on a larger scale, was a problem in villages on a smaller scale: The best fields could not be used efficiently if one did not get there easily, as the walk to and from such places would have consumed too much of one's time. So looking into infrastructure regulations means looking into village economies, albeit on a non-monetary, but rather labor (and therefore, energy) based level.

The second idea behind the choice was to understand more about the ecology of the late medieval Austrian village by looking into those spots that are environmentally sensitive. Searching for the interstices has already been identified as an important task to understand pre-modern agriculture. Such parts of the landscape are not mentioned in other sources such as tax registers as they were not taxed, but they are extremely important for an ecological analysis.[12]

In ecological landscape analysis the ecological virtues of a particular area are, among others, defined by a parameter called "matrix connectivity". Connectivity is high in landscapes with lots of linear elements such as paths. They are at the same time connecting and disconnecting the plots of land in between them. The analysis rests on the assumption that all linear elements in the landscape, such as ditches, paths, hedgerows, creeks and fences were ecologically linking rather than de-linking features. An ecologically de-linking feature of modern landscapes would e. g. be a motorway, which cuts through landscapes and makes it impossible (or very difficult) for animals and plants to cross over. What was linking humans in pre-industrial times was also linking other species for most of the time, and humans used natural links for their own traffic. Landscape features such as paths are important for interaction possibilities of animals and even for such things as plant seed dispersal.[13]

Whereas it is not possible to draw a map of such elements on the basis of these sources, it is important to know about the regime of use and maintenance applied to such elements, as this regime determines how

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[12] Verena Winiwarter, "Spurensuche in Ostarrichi. Dynamik und Tradition im gesellschaftlichen Umgang mit 'Natur'," in *Kulturlandschaft für das nächste Jahrtausend – Trends – Perspektiven – Visionen, Symposium am 14. und 15. Juni 1996* (Amstetten, 1996), 5-14, in particular the discussion of interstices 9-12.

[13] The concept of connectivity is explained in Richard T. T. Forman. and Michel Godron, *Landscape Ecology,* (New York, 1986), 405 f.

such an element would really function ecologically. People living on and from the land had some idea about the agro-ecosystems they used, and it is important to know how they perceived such landscape elements. How often were ditches cleared? How often were paths repaired, how often were they inundated? What kinds of fences were erected? How long did they persist? All these questions would be important for structural analysis of the landscape.

Concerning the elusive character of normative evidence, it is assumed that if a landscape element exists in the law it has at least at some time in the past existed in the landscape. Further, it can be reasonably presumed that common perception contains as much truth as is needed for common action. E. g., if a village law contains regulations about the clearing of ditches, it is not unfair to guess that they actually became congested from time to time. If a village law speaks about different kinds of fences this does not necessarily mean that they existed. It does, however, mean that it was possible for villagers to make a distinction between, e. g., persisting fences and seasonal ones. Therefore we know something about the range of possible fences and what they could look like, this being important for understanding their ecological impact and the amount of work needed for this colonizing intervention. So, the normative sources can be used to create an overview of the ecological outfit that was possible, and due to their abundance they allow to do so on a spatial scale beyond the local micro-level. Whereas this paper does not contain an ecological analysis it is aimed at putting together all the necessary source material to produce such an analysis in the future.

Results

Ecologically speaking, the analysis is centered on linear landscape elements, the so-called corridors. From an agricultural viewpoint the corridors are the main infrastructure for transport. For the analysis several of the groups the database offers have been used: paths, vineyards (as they tend to be very small with a lot of man-made structures), borders, and especially fences. In looking for local margins or micro-level peripheries the addition of "*oede*" (barren, unused land) would have been interesting, but there is not enough evidence for the 15th century which was the basis of the investigation, however. The equally interesting "ditches" have not been defined as an extra topic in the database and most of the evidence is found under the header "water". Ditches will be included in further research on the shaping of the agricultural landscape. Each of the sources mentioned below is clearly

defined by its location and year of issue and can be traced not only in the database, but also in the printed editions.[14] The EHDA comprises c. 3000 items, the numbers given below for the incidence of specific regulations are to some extent misleading, as the unchanged re-issuing of a regulation at a later date has to be counted as an extra item. So the numbers given below should only serve as rough guidelines and not be used for statistical purposes.

Paths

Starting with the 15th century, the database contains about 126 items on paths.

In general, maintenance of paths including regulations about inspection duties comprises the largest number of regulations.

Several regulations exist about the cleaning of paths ("*räumen*") and that polluting paths is forbidden. On the one hand the sources are concerned with the maintenance of existing paths. On the other hand, regulations concerning new paths form an important part of the material: Path building is regulated and it is even forbidden to move existing paths laterally without prior consent of the community. As the dynamics of nature excel their force on such structures as paths, the correct behavior after inundations is also a matter dealt with in several of the sources. How to behave correctly when using paths that belonged to another community, which was often necessary, is regulated. Paths belong – as to their regulation – to the inventory of infrastructural outfit each community maintained, and quite often paths, bridges and "*Stege*" (footbridges or plank bridges, that might cross a ditch) are regulated together. The use of paths is also regulated, both concerning the rights granted to strangers as concerning restrictions that applied for a limited time only. In the detailed account given below sources are given with date and time, and several examples were chosen to show the breadth of solutions devised.

Cleaning of paths ("Räumen")

About 5% of the regulations deal with cleaning. Wood, stones and wastes from vineyards are specifically mentioned as items to be cleared off. The waste material that arises from wood-cutting is also mentioned. The main aim of all the regulations is to keep paths open for passage, at least for a simple carriage.

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[14] Gustav Winter, ed., *Niederösterreichische Weistümer*, 4 vols. (Vienna, 1886-1913); Helmut Feigl, ed., *Die Weistümer Oberösterreichs*, 4 vols. (Vienna, 1956-1960).

The custumal of Summerau (1555) offers the most detailed account about the way in which paths were constructed: In such cases, where a neighbor had to lead drainage water across a path, the drains must not be deeper than two fingers' depth. The drains must be cleaned regularly. We can conclude that paths could be crossed by small drains that were used to lead water across them, and that these structures required regular maintenance. In case a user of the path suffered from neglect of these drains or from wrongly designed ones (which were probably too deep), the proprietor adjacent to the path (presumably the builder of the drains) was liable for compensation and, in addition, a fine was collected.

Prohibition of polluting paths

C. 6% of the custumals under consideration prohibit path pollution. The main aim of the regulation was to make sure that the polluters cleared the dirt they had made themselves. Such regulations are particularly abundant in vineyards, due to the nature of harvesting and the small size of the paths therein. Since the 15th century, the texts are very similar. In the 18th century the custumal of Wopfing explains in detail, why the regulation is necessary:

"da sach wäre das ainer reben in die weingartgaßen werfen wurd und das etwann ein güß käme und verschüttete die weingartengassen und das sich das wasser in einen andern weingarten schwöllet und thätte ihme schaden in den weingart, so wäre er schuldig ihme den schaden abzutragen und der herrschaft darum zu wandl 72d."

Path clearing was necessary, we learn, because polluted paths would not be able to serve as drainage ditches in cases of severe rain. Should the paths be congested, the water would find its way through the vines and damage would be far greater. Erosion on paths was a side-effect of their use as drainage, and it can be inferred from the custumal that this was not only accepted as a matter-of-fact but understood in its protective effect for the vineyard.

Pedestrians and riders alike are to be protected from dangerous wastes in a regulation issued for Meidling between 1440 and 1460. Paths were used by and for animals, and neither their blood nor their excrement should be spilled on the paths. In this case a path within the village center was probably thought of, and the bad smell gets mentioned: *"Item er soll auch das plut oder den unflat den er da löst von seim viech schütten on schaden der gemain von dem Weg daz man daruber nit reit noch gee noch keinen gestank der gemain nit pring ob er dez nit tät, so hat der richter zu nötten mit 12d zu wandl."* Paths should be usable, is again the main aim of the norm.

Path maintenance

A fifth of all regulations deals with maintenance work, which is clearly set apart from cleaning. Some of the regulations set a date at which the work should be done, others simply specify that the paths should be repaired before harvest. Paths are of vital importance for agricultural production, therefore landowners adjacent to a derelict path were in some cases required to give part of their adjacent fields as construction sites for a new path. They were to be compensated for their loss with areas in another place. The Gutenstein custumal (last quarter of the 15th century) informs about possible causes for the destruction of paths and roads by stating that in case a path is flooded and thus rendered unusable the adjacent landholder should give from his soil to repair the path. He was to be compensated with another piece of land.

Villagers could be required to maintain the parts of a path adjacent to their ground. Did the person in charge leave the path in unusable condition, path-users were allowed to move to the adjacent field, an action that would be under punishment as long as the path itself could be used. The custumal of Trautmannsdorf (15th century) sees the community, and not single persons responsible for path maintenance. The community in this case was liable for any damage a user might experience from a badly maintained path. Responsibility could be shared by the community or rested on individuals, there is no clear dominance of one of these two solutions in the source body.

A similar regulation on maintenance declaring that users were not liable for damage resulting from bad paths is found for Strasshofen 1499. Regulations were sometimes quite specific. In Brunn im Felde (last quarter of 15th century) the path crossing the common pasture is noted with its width (*"18 Schuh"*) and its use is specified: *"Item wir haben ain angemesnew lantstrass auf unser waid, sie sol sein 18 schuech weit. Und wer uns die äcker oder gräben aufwurf der wer umb das wandl 12d als oft er das tuet."*

All infrastructure had to be maintained, and the Neumarkt source (15th century) specifies paths, brigdes as well as plank-bridges and gates as objects to be maintained on a communal basis. The judge had the right to order such work and was liable if he did not manage to make the villagers keep their infrastructure in good shape in case damage resulted from this. Neighbors shared the maintenance of infrastructure between their respective fields. Often, responsibility for path control lay on the judge and the jurymen, but in Ybbsitz (1484) the function of a *"Wegmeister"* (master of the paths) is specified.

Controlling the paths happened at specified dates, and fines often could increase, if repair was delayed, as, e. g., stated for Gobelsburg in the first quarter of the 15th century. Illegal paths are a rightful concern of the custumals, as shown below, but also the narrowing of paths to increase one's field size could be a problem, which is made clear in a later, more detailed regulation for Oberwallsee (1714): *"Item wer der ist, [der] sein rain, weeg und steeg, wie der von alter herkomben ist, ungewöhnlich schmelt ihme selbst zu nuz und guet und den anderen zu schaden, es wehr durch reiten, fahren oder gehen, der ist dem landrichter umb fünf pfund und 66 pfening zu wandl und dem anderen, der schaden daran nähmbe, sein schaden abzethue."*

Prohibition of illegal paths

Whereas the regulations mentioned so far were issued for the sake of the path users, the agricultural land needed protection from path development as well. 20% of the cases deal with illegal, new paths. Not only was it considered an offense to build such a path, its use by others was also prohibited and fines were to be collected each time the path was used. In this case we might reasonably doubt the feasibility of the norms, nevertheless even knowing about an illegal path without reporting to the judge was in some cases considered unlawful.

It is forbidden to trespass through fields and meadows, in particular before the harvest, which one would expect. In Neustift am (Achs-)wald the custumal issued in the 15th century stated that meadows had to have a path; in case they lacked a possibility to walk through them on a path, one was allowed to walk through the meadow. Path-rights are given a strong case in this regulation.

In Kammern in the first quarter of the 15th century it is made clear that unnecessary paths should be identified and forbidden, the latter was to take place on St. George's day (April 23). The source from Schenkenfelden states that the old paths have to be used for walking, riding and driving. If by carelessness someone would walk on other ground, he had to pay a fine.

But how could one know which paths were allowed and which forbidden? Thornscrubs should be used to mark the borders of the lawful path, a measure prescribed in connection with the destruction of illegal paths (Schatterlee, 1489).

Later custumals tend to be much more elaborate and detailed, also when path development is concerned. Therefore, an 18th century example shall be cited to illustrate the point: If one has to build a new path, it should be done where a trail already existed. *"Item eß soll ein ieder vor*

seinen grund unzt in den huefschlag machen, ist aber der grund poden
halben sein, so soll er ihn allein machen, ist aber ein böser weeg von
einen antlangen, der soll demselben unzt an den neunten rain gemacht
werden".

Also in the later sources, one regulation tries to sell its interest by
explaining that new paths would decrease the value of one's land as the
right of way implied in new paths would become prescriptive
(Vichtenstein, 1688).

Vineyards

Paths in the vineyards had to be cleared as, e. g., stated around
1450 for St. Johann auf dem Steinfeld. The two forms of obstacle
mentioned are stones and vines. But in addition to such regulations, the
congested situation of the vineyards with their precious land and vines
demanded space-saving path design. Paths usually had extensions for
turning the carts. It was forbidden to make them any narrower, as issued,
e. g., in Simmering (15th century): *"wer ein wendstatt engt, es sei mit*
gräften oder rebmzauß, daß man die wägen nit umbkeren möcht als von
altes herkommen, ist zue wandl fünf pfund pfening verfallen"

In St. Ulrich (1446) the use of the turning places as a common is
decreed, again a sign of the especially demanding situation in the
vineyard. For an ecological interpretation this type of information can be
used to set model parameters for landscapes solely via information on
land use.

The interaction of water and paths

Running water constituted a major danger for paths prior to the use
of impermeable top layers. Path erosion must have been a serious
problem especially in mountainous areas. Regulations often come in
combination with mills, as the watercourse for the mill presented a
special danger in case of floods. The miller is responsible for all the
infrastructure in connection with the mill, be it the watercourse or
ditches, yearly cleanings are decreed, and the miller is liable for any
damage caused by the neglect of this duty (Trautmannsdorf around
1477). The custumal of Markersdorf an der Pielach explains as early as
1490 the reasons for such a regulation: *"Ain ieder mullner der die müll*
besitzt zu Märkherstorf und nit raumbt den grabm seines mullgang das
das wasser in das aigen rinnt, dadurch dann die strassen und wege
verderbt, das man nit faren, reiten oder treiben mag, das dem aigen zu
schaden käm, der ist dem vogt verfallen das groß wandl 6ß 2d." The

same source is concerned with the illegal diversion of water from its course: "*Wer den pach abläst und verderbt die weeg, das der gemein zu schaden kumbt und seinen nachtpauren, der ist dem vogt verfallen zu wandl 72d*", and again, the destructive effect of water on paths is given as the reason.

Fences

It was forbidden to destroy fences, as declared for Ottensheim 1470 in a custumal listing other forbidden things as well: One was not supposed to cut grass on others' property and likewise not supposed to cut trees not in one's possession, etc. These regulations were issued – which is of interest for landscape reconstruction – especially for the meadows and the riverbank, and applied, as is quite common, particularly during the night. The same source ordered to build a fence around "the ditch", and to maintain it in shape. The Schenkenfelden custumal (15th century) simply forbids to destroy fences or cut the stakes. In Hellmonsödt 1481 it was specified that the breaking of holes into a fence was forbidden. Fences and other infrastructure features interact: Old paths can become obsolete, and new paths and roads are built. For Hofkirchen (1485) a special regulation states that fences must not be destroyed during the building of new paths, neither was it allowed to throw debris on the paths, the source might refer to material dislocated during the building work.

It was likewise forbidden to build fences on the neighbor's property. In such cases fines could be increased and made payable from each stick of the fence, if the fence-builder did not comply in the first place (Hofkirchen, 1485).

Fences are of overarching importance for mixed farming systems, they are needed to protect the fields from animals, the animals in turn need to be protected from getting into the fields as they could be gorged. Wild animals coming into the fields from the surrounding forest where a major problem and yields could dramatically decrease due to grazing deer or other wild beast. Agricultural systems could – and most often would – also comprise gardens or orchards. From an example of the 16th century (Windhaag, 1577) it can be learned that the orchards could be fenced in. "*Item von wegen der paumgarten, wan vüer oder fünf wägen dardurch fueren und nach inen offen luesen und dardurch schaden geschäch, so miest der hinter den schaden zallen und daß wandel dem richter geben 12 d.*" From this regulation we also get to know a major problem: When a path crossed land that was fenced in for any reason, grated doors had not only to be opened, but to be closed after use.

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Successful agricultural management depended not only on the weather and the seed quality, but also on the proper use of infrastructure, which is all too easily overlooked.

Forms and materials

Only three different terms for ways were found in the material, "*Weg*", (with one mention of "*grasiger Weg*" (a path covered partly by grass), "*Gasse*" for paths within the village and "*Landstraße*" for a larger, cross country way are specified in the material used. The vocabulary concerning fences offers more detail: In Schenkenfelden (15th century) we read that it was forbidden to erect fences around garden plots on the community grounds in "other than the usual way". This together with another paragraph in the same source distinguishing between two types, namely "*getratenen*" and "*ungetratenen*" fences teaches us that transitory fences could be distinguished from permanent ones and only permanent ones should be used for fencing the banned lands. The term "*panzäun*" describing fences erected around the banned areas is often found, but also garden fences, a fence for the farm ("*Hofzaun*") and terms more specific to the make of the fences are found. "*hurten und gättern*" refers to a hurdle and the respective door. "*Zustecken*" are extra poles used in an angle to the fence to strengthen it. Wood for fences sometimes probably was rather scarce, as the Freistadt custumal refers to the burning of fences (Freistadt 1635) and for 1756 (Gallneukirchen) the decree issued orders peasants to use living fences or stone fences built from the stones one took from the fields.

Fencing the arable fields

The right moment has to be picked for sowing, the time window can be quite short, and waiting too long will decrease yields, as grains will not be able to ripen completely, which in turn means a huge loss in quality. Before sowing can be undertaken, however, all fences to protect the arable have to be erected and be in good shape.

In the source from Hellmonsödt 1481 we read that fences should be erected either before St. George's day (April 23) or as soon as one could dig hand-deep into the ground.

In Hofkirchen (1485) we find more fences to be erected: All fences should be ready at the date of sowing, if someone missed this date and a damage resulted he had to pay for this damage. A similar regulation is found for Freistadt. Five of the thirteen regulations concerning the fences around the arable land make clear that fences had to be erected as early

as possible (Weitersfelden 1548, Windhag 1577 and again 1646, and Neumarkt, 15th century) A typical example is Reichenstein (1552): *"Item welicher sein pannfridt nicht fridt, alspalt er mit dem Stecken in die ert mag, der ist zu wandl verfallen ohn alle gnadt 72d."*

Fences were visited on a regular basis and attendance to this meeting was compulsory (Reichenau 1495). The same source, albeit less detailed, contains a regulation on the erection of fences. The fences should be built upon a decree issued by the village judge. In Neumarkt (15th century) the fences protecting the banned (i. e. the landlords') parts of the land were to be left standing during the entire year, holes had to be closed and damage had to be repaired by the originator. These fences were controlled by the judge, as is clear from the source from 15th century Schenkenfelden. In Ober-Absdorf (around 1450) the judge and the jurymen should control fences (and, as is stated, the fireplaces) after each *Banntaiding*, i. e. the regular day of jurisdiction. Fences had, as was hinted above, a double function: They protected the harvest, but they also protected the animals from overfeeding and thus getting sick. This becomes clear from the Schenkenfelden source, where the offender, whose fence permitted animals to get into a field, was liable for the damage done to the animals. *"Item ob daz wär daz si ir fridt nicht machenten und in unser viech schaden tät, so sein wir in nichtz darumben schuldig, si sein uns auch sölh unser viech an allen entgeltnuss widerumben schuldig zue antburten, wär aber sach daz ir viech durich ir fridt herdurich giengn und uns schaden tätn, das selb viech haben wir zue phenden und von iedem haup ze wandl 12d dem richter und dem da schaden beschiecht denselben abzutragen nach erkantnuss der nachperen"*

Maintenance of Fences

Two later examples can serve to picture the never ceasing problem of fence maintenance. For Reichenau [an der großen Gusen], Upper Austria the source reads:

"Die spelt- und panzäun umb angepaute äker, gärten oder wißmaden, auch waiden sollen sommer und winter stehen, da sie aber durch ungewitter, wint und andere gewalt abgeworfen werden, soll ein ieder, so bald man in die erden mag, inerhalb vierzehen tag lengist, seinen theil daran aufrichten, damit seinen anrainenden nachbaren destwegen kein schad, noch ihren frichten entzug beschehe; wer abe in disem fraventlich und saumbig erfunden wurde, der solle von ieden ligenten und unaufgerichten steken der obrigkeit 72d zur straf und wandl erlegen". In addition, this piece shows all the parts of the agricultural

landscape that were fenced, and should, according to the source, be fenced all year round. The special harshness of winter is vividly before the eyes of the reader with the description of Oberwallsee (1714): *"Item zum ersten sollen alle pannzeun sommer und winter mit aufgereckten stecken, ausgenohmben ob ein großer schnee oder wind sie umwuerfen und wann eß dan zu gleichen wetter kombt, das man vor gefrier in die erden mag, so soll ein ieder, der in den feldern hat, sein zaun friden in 14 tagen darnach; wer das nit thätt, der ist dem richter zu wandl 62 pfening verfahlen auf gnad und einen seinen schaden, alß recht ist."*

Where should the fences be, and how should one proceed with them?

Sixteen source items forbid the destruction of fences, and their use as a border between individual holdings is regulated in 11 cases. It was also forbidden to proceed as one pleased with trees growing on the borders (e. g. Neumarkt n. d., Oberneukirchen 1485), the neighbor had to be notified if one wanted to cut such a tree (Reichenau 1495).

The harvest of fruit bearing trees on the border should be divided equally (Neumarkt, n. d.). In the same source we find a regulation as to what should happen, if fruit from a tree on the *"rain"* , the bank between fields, fell on the neighbors' ground. In such a case, the neighbor had to allow the owner of the tree one third of what had fallen on his property. In Reichenau (18th century) this regulation is very detailed: *"Welcher nechst seines nachbaren fruchtbare paumb auf aigenem grund ganz frei stehend hat und die frücht hievon auf seines nachbaren grund hinumb fielen und ain oder zween tag gelegen, so mag er sie am dritten tag noch aufklauben, so sie aber über den dritten tag ligen blieben, so gehören sie seinen nachbaren hinwek zu nemmen zue, stehet aber der paumb mitten in den march, so gehören ieden thail halbe frücht zue"*.

Other regulations try to prevent such problems of division of fruit tree harvest among neighbors, as they forbade to plant trees next to the border or fence, in case of fruit trees at a considerable distance (*"9 Schuh"*) behind the fence. Even willows were forbidden close to the fence, a smaller, but still measurable distance (*"3 Schuh"*) was to be observed, because, as is explained for Reichenau (18th century), the roots would otherwise damage the neighbor's field.

It was, one is tempted to add, "of course", forbidden to dig out boundary stones, or to change borders between parcels (e. g. Schenkenfelden, 15th century, Hellmonsödt 1481). The community would organize a formal inspection if disagreement of neighbors about their border occurred (Hellmonsödt, 1481). If one dug out such a stone he should put it back whilst the neighbor was watching (Neumarkt, n. d.).

Obviously such a dislocation could happen during plowing accidentally, as becomes quite clear from later sources.

Using cases as these, not only the social universe of peasant communities engaged in conflicts about borders and fences becomes quite clear but one can also infer that willows and fruit trees were located in some distance from the borders, therefore we can add to the knowledge gained by cadastral maps at least in such cases where more than one use is denoted on a parcel that trees probably were situated within the parcel, not at its very margins.

Interstices

It is of interest to learn about the private utilization of the common lands, in this case interstices at a larger spatial level than the single element (such as a hedgerow or a bush). As there was no collection of fees and deeds form the temporary use of margins and commons they are non-existent in the material produced by seigneurial administrators, so all that can be learned about use and structure of such places is of special value. Fences could be erected on the commons, and each villager had the right to use part of it (as much as could be plowed in one day) as grain-field or for cutting grass. But this right was limited to two years. After that period the fences had to be taken away and the parcel should be left. It was, however allowed to re-erect fences on other parts of the common land, and other users could take the land and work on it for the next to years. This was decreed for Oberneukirchen in 1485. The common land could temporarily become private and the fence was seen as the main indicator for this process. *"Item die ungetailten grünt oder auf der gmain so auch zu dem markt gehoren, der mag ain iesleicher purger zu pflanzpettn wismat oder zu ainem tagwerch akcher zu prein odr habern aines iedn jars auffachen einzein nützen und niessn zwai jar und nach ausgang der zwair jar, so sol der zaun fudergethan werdn, damit es ain gmain bleib und nit ain ieslicher im zu aigen zueprauch. Aber der selb burger mag auf den ungetailten grünten anderswo widerumb auffachen und einzein und aber zwai jar nützen und niessn wie vor. Es mag auch ainer die ersten grunt, ob die nit ain anderr aufgefangen hiet, widerumb auffachen und aber zwai jar nützen und nach ausgang der selbm zwai jar widerumb auf der gmain und tratten lign lassn wie vör, dadurch imbs chainer zu seinem haus zu aigen zuebrauchen noch verkaufn sol und mag: welcher das uberträdt sol gestrafft werden wie ain fravel"*

Of similar interest is the custumal from Schönberg (between 1430-1625) from which we learn that in ditches, one of the more abundant

interstices, and other specified places no animal grazing was allowed, whereas one could cut the grass at those places: *"dan sollen verbotten sein alle sondere halt in gräben, zwischen den weingarden, in wegen und in gärden vor und nachst. Geörgen tag, alein er halt da ainer in dem seinigen wer aber sunder will halten, der halde der viechtrift nach wer aber daß nit hielt, der ist von iedem haubt zwölf pfenning wandel schuldig hiet er aber ain schaden gethan, derselbig solle den schaden erben aber in den gräben, zwischen den weingärten, in den wegen mag ain ieder frei grassen."*

Similar in its differentiation is another grazing regulation: On the grassy path animals could graze for free, whereas for grazing in the forest a fee had to be paid. Stratzing (15th century): *"Item, freie viechwaid auf dem Grassing weg. item, und freie waid gen wald auf und ab, und geit man von ieder chue 2d dem vorstmaister von der waid."*

Interstices could well have played a crucial role in local subsistence and they are of enormous interest to the landscape ecologist wanting to infer estimates of productivity and the overall working of the agro-ecosystem. These few examples solely for linear landscape elements point into a direction that could well be pursued further.

Concluding remarks

Three conclusions regarding the future use of the presented data can be drawn:

- To calculate the amount of labor needed for agriculture in the Middle Ages one has to include the maintenance work needed for infrastructure and the work needed for erection and subsequent dismantling of temporary structures such as fences.
- The information about the temporal amount of work and its structure is an important part of any modeling effort.
- The maintenance of infrastructure as a common problem and duty put a demand on control and enforcement that made a certain degree of administration necessary. Administration might thus be a tribute agriculture made necessary, the stratification of feudal society to some degree then can be seen as a necessary outcome of the mode of production or socio-metabolic regime.

The social construction of the environment becomes quite clear: Neighbors shared responsibility for keeping their borders in order and shared profit of what was growing on the interstices. Commons could serve as an economic reserve for transitory use. The landscape was abundant with features such as field-banks and other interstices which are also an important factor of ecological resilience. So the work put into

the maintenance of such man-made structures probably had a double effect: It helped humans as well as the agro-ecosystem. Human labor demand was, as should be emphasized, high on such linear, infrastructural elements which are primarily unproductive parts of the landscape.

The source material offers the possibility to estimate the disturbance regime of some crucial elements of landscape ecology, the corridors. In landscape ecology disturbance comprises human activities such as drainage, grass-cutting, soil compaction and others. It has been shown that the custumals offer a wealth of information on the disturbance regimes in late medieval landscapes. In addition to corridor elements other features could be analyzed[15].

The measurement of colonization intensity, which is as yet poorly developed, might also benefit from an infrastructural approach such as the one presented in this paper. The EHDA could be put to further use in an interdisciplinary effort for a history of the man-made agricultural environment in the longer, historical view. Such a long-time perspective is a prerequisite for the measurement or estimate of "sustainability", should this currently popular word not be rendered meaningless in the future.

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[15] Maps of ecological landscape structure have been created by our team as far back as 1733. Using custumals, archaeological evidence and other sources one could try to push such analyses even further back in time, albeit probably on a less detailed spatial basis. For the landscape ecology maps of 1820 and 1733 see: http: //www.pph.univie.ac.at/kg2/iale98/publ_e.html.

MEDIUM AEVUM

QUOTIDIANUM

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HERAUSGEGEBEN
VON GERHARD JARITZ

Titelgraphik: Stephan J. Tramèr

Inhalt

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Vorwort

Die Beiträge des vorliegenden Heftes von *Medium Aevum Quotidianum* beschäftigen sich mit Problemkreisen mittelalterlicher und frühneuzeitlicher Alltagsgeschichte, die diesmal den Bereich der Aussage bildlicher Quellen, jenen der 'Umweltbewältigung' und manche Aspekte des Nahrungswesens im Zeitrahmen festlicher Anlässe betreffen. Sie beziehen sich damit alle auf Perzeption, Praxis und Praktiken im Spannungsfeld bzw. Einklang zu Normen, Wünschen und/oder Idealen.

Die folgenden Hefte von *MAQ* werden sich einerseits neuerlich verschiedenen alltagshistorischen Einzelstudien von eingeladenen Beiträgern und von Mitgliedern und Freunden unserer Gesellschaft widmen, welche die Bandbreite der Inhalte und der angewandten Methoden in der Forschung, sowie neuer Zugänge zur Alltagsgeschichte des Mittelalters vermitteln sollen. Andererseits werden im Jahre 2000 die bereits angekündigte Bibliographie zu den Graffiti des Mittelalters und der frühen Neuzeit, sowie die Arbeit von Lothar Späth zu Raum, Raumverständnis und Raumfunktionen in frühen englischen Zisterzen als Sonderbände unserer Publikation erscheinen. Die Planungen für einen Band zu alltagsrelevanten Bereichen der „Neithard-Rezeption in Wort und Bild" sind ebenfalls schon recht weit fortgeschritten. Die stark erweiterte und überarbeitete Neuauflage der „Bibliographie zu Alltag und Sachkultur des Mittelalters" (vgl. *Medium Aevum Quotidianum* 7/8, 1986) ist ebenfalls in den Planungen für die nähere Zukunft enthalten und befindet sich bereits in Erarbeitung.

Gerhard Jaritz, Herausgeber

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