

24 LANDSCAPE AND LITERATURE: THE ECOLOGICAL MEMORY OF *TERRAS DO DEMO*, PORTUGAL

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INTRODUCTION

Reading landscape in literature

Early suggestions for using literature as a potential source of geographical knowledge came from J. K. Wright in 1924 (unsigned note in the *Geographical Review*, quoted by Salter & Lloyd, 1977). He observes that writers “visualised even more clearly than the professional geographer those regional elements of the earth’s surface most significant to the general run of humanity” (1924: 659). Later, others called for studying writings with a geographical focus, as did Darby (1948) in his analysis of Thomas Hardy’s fictional Wessex. He suggested that literary landscapes could be used to fill a gap between other objective descriptions. Lanegran (1972) also wrote about valuable contributions of “good regional novelists” to understand people’s attitudes toward the place and their views of each other. Salter & Lloyd (1977) returned to the topic, stimulating discussions among landscape specialists and suggesting the appreciation of literary texts, given an assumption that the work was written under some constraints of realism. After ensuring verisimilitude (crucial in evaluating the strength and scope of landscape understanding), they suggested analysing both the literal contents of descriptions (which are framed by objectivity) and the experience of landscape (which is framed by subjectivity). Ibarz (1988) elaborated further on this subject, commenting on relevant topics for the geographical reading of novels, such as the evaluation of the “sense of place” that informs the narrative, the places’ description that support human behaviour and the extension of narrative as a material for understanding historical human daily life.

Recently, the “ecological thinking on literature” called ecocriticism (Love, 1999) has expanded its borders outside the tradition of literary studies in nature writings (*cf.* Armbruster & Wallace, 2001) and it has begun to be used to valuate projects that include the possibilities of certain forma of natural scientific inquiry (e.g., ecology and evolutionary biology), and social scientific inquiry (e.g., geography and social ecology) (Buell, 1999).

The Portuguese writer Aquilino Ribeiro (1885-1963) (below referred to as Aquilino) created the designation *Terras do Demo* (meaning Devil’s land) in reference to his native region. It is a “literary territory”: an area differentiated by literature, which people (especially readers and local inhabitants) identified with and, through meanings

and symbols, associated to one writer or his writings. He used the term the first time as the title of a 1919 countryside novel (Ribeiro 1919), but he mentions it in several other novels and essays that pursue his main aim: to describe an existing territory and a particular landscape. Aquilino expressed his attitude in his own words: “the novelist is above all an annotator. I am a spectator greedy to see.”¹ Strongly attached to the villages and highlands of Lapa and Leomil (Beira Alta, Portugal), where he was born and spent part of his life, he resisted romanticizing the peasants’ life and their relation to nature. He maintained a realistic approach based on experience and memory.

Aquilino’s writings are very rich in information about the driving forces shaping ecological, economic and cultural landscape values. Representation of the natural and cultural surroundings and the active relation between humans and the environment are relevant features of the writer’s literary construction. Similarly to Thoreau’s country (in Massachusetts, New England, USA) and other place-times preserved in writings, people still identify this area as Aquilino did and retain the references and designations created by the writer in their current daily life.

Understanding cultural landscapes

Landscape description evolves to include objective and subjective contributions. Lewis (1985) states that good geographical descriptions may consider both. This is mainly because the concept of landscape itself includes natural and cultural dimensions (the spatial entity, the mental entity, the temporal dimension, the nexus of nature and culture, and the systemic properties of landscapes, according to Tress & Tress, 2001). There are also differences between space (which is described by scientific knowledge) and place (which is about experience and meaning) (Tuan, 1979). All this suggests an integrated study that could look for different information sources and identifying or understanding forms and origins. Besides that, people have different perceptions and experiences of the same space, which is relevant for elaborations on and decisions about conservation and management.

But why does one study a past landscape? Research on rural landscape changes in Terras do Demo during the 20th century is supported by two assumptions about cultural landscapes: (1) they are repositories of legacies and (2) they are not only land-use mosaics but also lifetime mosaics, *i.e.*, villages and their surroundings keep ecological memories from different times and stories. Ecological memory, previously defined in the strict context of natural sciences (Thompson *et al.*, 2001, Bengtsson *et al.*, 2003), should refer to the domain of environmental history. This branch of history insists that humans are and always have been creatures of nature, dwelling in a natural world (Worster, 1988). A broader definition of ecological memory is close to the idea that natural traces of the past act as a reservoir of knowledge about preceding people’s relationship with nature. Humans and human agencies are part of the changing ecosystems and landscapes. Recognition of the importance of land-use history and its

¹ “...o romancista é mais que tudo um anotador. Sou um espectador ávido de ver” (Ribeiro, 1973: 101).

legacies in most ecological systems has been a major factor driving the recent focus on human activity as a legitimate and essential subject of environmental science (Foster *et al.*, 2003).

When an “object” materialises the remembering, ecological memory becomes tangible: an identified patch of forest in a map or a self-record (like a photo, an oral narrative, a text). In this context, a literary landscape might deny oblivion, impoverishment and meaninglessness. Furthermore, factors that threaten landscapes are those that erase ecological memories of natural, cultural and aesthetic values.

Objectives

This paper brings forward a complementary reading of a past landscape based on Aquilino’s writings and land-use maps from the first half of the 20th century, exploring differences in the types of information they offer to build a more comprehensive environmental narrative. Linking data of different qualities, an identified challenge for studies of landscape changes (Burgi *et al.*, 2004), it discusses methodological issues.

The study presented here is included in a broader research project that aims to contribute to sustainable development in this rural area and to preserve biodiversity and landscape character. It constitutes the baseline for understanding and managing current landscapes, based upon the knowledge of the past and the changing processes that imprinted the current local features.

THE STUDY AREA

Terras do Demo is a mountainous marginal agricultural region that faced continuous depopulation and agricultural abandonment during the 20th century. It comprises the Lapa and Leomil highlands, two extended plateaus with a maximum altitude around 1000 meters, crossed by the Paiva river valley. Before the end of the 1950s, agriculture and pasture were the main forces shaping the landscape, followed by afforestation, between 1960 and 1975, and wildfires, after 1975 (Queiroz, 2005).

The study of land use ca. 1950 focuses on 11500 ha (Fig. 1). This core area includes 18 small villages and the area most frequently portrayed in Aquilino’s writings. External limits follow those of the civil parishes of Peva, Ariz, Pera Velha, Caria, Carregal, Lamosa and Quintela.



Figure 1: The *Terras do Demo* core area. The map shows 18 small villages in the area.

MATERIAL AND METHODS

The first half of the 20th century was a period of relative stability in terms of the driving forces that shaped rural landscape. In reference to that period, Aquilino's writings and a land-use map were analysed.

Aquilino's writings

After consideration of the telluric content and the portrayed region, several writings were chosen among the large set published by Aquilino: *A Via Sinuosa* (1918), *Terras do Demo* (1919), *O Malhadinhas* (1922), *Andam Faunos pelos Bosques* (1926), *O Homem que matou o Diabo* (1930), *Volfrâmio* (1944), *Cinco Reis de Gente* (1948), *Quando os Lobos Uivam* (1958) and *Mina de Diamantes* (1958), as well as non-fiction essays and chronicles *Aldeia – Terra, Gente e Bichos* (1946), *Geografia Sentimental* (1951), *Arcas Encoiradas* (1953), *O Homem da Nave* (1954) and *Um escritor confessa-se* (1973).²

Excerpts that mention species or describe landscapes or processes of resource exploitation were recorded and classified according to taxonomic and ecological descriptors. Attitudes, views and judgements related to nature were also retained.

² These years refer to the first editions of Aquilino Ribeiro's writings. A full list of these and of the second editions, which are quoted in this paper, is provided in References.

The excerpts included in this paper are representative rather than comprehensive. From *Quando os Lobos Uivam* (1958) translations are from the English version of Patricia McGowan Pinheiro (Ribeiro, 1963). Footnotes include the original version of translated citations.

Land-use map

From an unpublished land-use map from the 1950s (1:25000 scale) (SROA ca. 1950), a contemporary map of the area described by Aquilino was built in a GIS, using ESRI's ArcGis 8.1. Aerial photographs (RAF 1947) and fieldwork supported the original map.

Fifteen land use classes were defined: "Social area"; "Dry crops"; "Irrigated crops"; "Permanent crops"; "Dry pastures"; "Irrigated pastures"; "Agricultural mosaics"; "Deciduous tree forests"; "Pine tree forests"; "Mixed forests"; "Agro-forests"; "Grasslands"; "Stone lands"; "Scrublands"; and "Scrublands with scattered trees". An "Unknown use" class was also created for missing data.

RESULTS

Reading and interpreting literary landscape

Landscape concept

The literary landscape includes an intellectual and an aesthetic dimension. While Aquilino describes the territory and the agro-pastoral daily life (which provokes an intellectual response), the writer often converts each place and each element into contemplative objects or in self-poems (which provokes strong emotion). In Aquilino's writings the two descriptive methods are not always separately identified. On the contrary, these two distinctive dimensions often overlap. As a result, readers have a sensation of knowing and feel themselves part of the world described. For something similar, Evernden (1997) suggests that feeling or sense of knowing is the cultural simulation of a "sense of place". For instance, when the writer describes a cornfield and reflects on the importance of the grain in the local diet, he compares the cornfield with well-known masterpieces. Aquilino recognised the talent of the painter Sorolla to depict cornfields; he retained the "strong green of Palissy's enamel"; looking at the field, he finds "more beauty in the eyes than from being in front of the Reims Cathedral".³ According to Luginbuhl (1991), this is part of the intellectual and cognitive process that transforms land (*pays*) into landscape (*paysage*).

Aquilino described the landscape as a result of human activity and the natural environment. In his sense, landscape is a historical-social product; it is subject and model (Dematteis, 1995). The writer focused on degradation and identified continuous bad agricultural practices as the main causes for changing land resources. He based his

³ "Sob o ponto de vista nutritivo, o milho rivaliza com o trigo, e quanto à paisagem apenas Sorolla, o pintor das messes, poderia com autoridade formular o problema se é mais bela uma seara com a sua ondulação incessante de mar, se um milheiral com a galhardia de alfanges e reluzindo o verde forte dos esmaltes de Palissy. Eu, quando olho para a minha regada de milho, sinto mais beleza nos olhos que diante as Catedral de Reims" (Ribeiro, 1985b: 277-278).

thoughts on Strabo's descriptions, written 2000 years before. For the Romans, Lusitania was a populous "satiated" country. It probably meant, in the current understanding, that, despite a high human density, the country preserved its natural conditions and guaranteed food supply for everyone. On the contrary, at his time deforestation and erosion were the dominant features: "People sow a handful of desert, stopping with the shower of rain, which is the woodland."⁴ "It subsists as a little more than a stone armoury."⁵ "Succulent soil drained to the rivers that rolled it to the sea."⁶ Texts suggest, by the use of expressions like "desert" or "stone armoury", that a non-forested landscape dominated the region, soil fertility was lower than previously (which used to be "succulent") but people had no alternative other than use it to survive. The writer also conveyed his science-based understanding about the relationship between the occurrence of forests and water source for irrigation, comparing the woodland to a "shower of rain". These ideas closely follow those of the Portuguese foresters of that time (Radich & Monteiro Alves, 2000) and sound similar to what Grove & Rackam (2001) called "the theory of ruined landscape".

Rarely do writings allow readers to approach landscapes as metaphors of the feelings of the characters. Barry Lopez includes this symbolic and internal representation in his rationale on the plurality of landscape: "I think of two landscapes - one outside the self, the other within" ("Landscape and Narrative", cit. Buell 1995). As an example, in "A Via Sinuosa", Estefania's lover observes her collecting small yellow flowers: they are "sun tears announcing Easter," she has "spiritual feet scudding along heaths and furzes," and "her white dress filled with the joy of snow in that sun shining area."⁷ The material and the immaterial become melted in the literary image and the commonly changed meanings produce a diverse reading of the experienced landscape: emotional feelings make the sun burst into tears; as an opposite of the human mind, located in the head, feet are spiritual, and joy is a snow feature.

The writer's experience of landscape transmits values and meanings to particular places and times. Religiosity and local pilgrimages are summer events that carried people to pray on the top of the hills (e.g., Pena Vouga rock). In regional understanding, these are the wolves' homes, places simultaneously feared and loved, avoided at night or during snowfall. On the contrary, river and stream banks are pleasant places selected for outdoor parties and picnics.

Considering space and time as landscape dimensions, the writer recognized the *genius loci*, a retained "territory essence" that never changed: "Everything in the world is a chain, *hoc propter hoc*. We succeed in varying only the form. The essence stays unique,

⁴ "Semeou deserto à mão cheia, acabando com o retardador das cordas de chuva, que era o bosque" (Ribeiro, 1985b: 182).

⁵ "O que subsiste é pouco mais que a armadura de pedra." (Ribeiro, 1985b: 221).

⁶ "A terra suculenta escorreu para os rios que a rolaram para o mar." (Ribeiro, 1985b: 284).

⁷ "Brotavam já do monte florinhas amarelas, campanuladas, que parecem lágrimas de sol e anunciam a Páscoa. Estefânia pusera-se a colhê-las e seus pés eram quase espirituais, singrando entre urzes e os tojos. Seu vestido todo branco enchia de uma alegria de neve a terra assoalhada" (Ribeiro, 1985a: 252).

unchangeable until the centuries' consummation."⁸ Furthermore, this landscape doesn't exist without people living there; inversely, people are also shaped by the land's character: "The souls of their inhabitants were born out of these petrified hill and rough gorges, (...) People passed through them, observed them, interpreted them and came to the conclusion: this is Iberia."⁹ Again in this text, the writer melted the landscape character, something material that comes from the physical characteristics or the "territory essence" – e.g., petrified hill and rough gorges – with the immaterial "soul" of the villagers. He suggested both are unique.

Spatial scale

Aquilino described landscape at different levels, from the close observation of minuscule beings to the panoramic view of the highlands. His favourite scale is a localized view that could explore high angular perspectives due to the depth of the valleys. Sometimes, he "flies" like a bird above fields and forests. In this way, the writer identifies the mosaic of land use and covers, achieving a global landscape description. He also comes close to catching details and allowing inventories of wild fauna and flora species. His descriptions of animal behaviour and morphology, especially concerning birds, can be extremely precise: "If you spy from a distance, rarely will you miss, fluttering or foraging about, the wagtail with its tail bobbing up and down, the rock thrush full of suspicion, the adventurer-magpie, and the little wren, which is the smallest of our birds and fears no one"¹⁰ (see also Queiroz & Andresen, 2007).

Aquilino less frequently uses panoramic views. Possibly as a literary artifice, he selected panorama for conveying the generic and abstract, which are not so frequent in his writings. As Martinez de Pison (2000) states, panorama multiplies hiding spaces, flattens relief and disturbs the vision of the plan from afar, reasons to consider it not the best analysis of landscape geography.

Sensorial landscape

The literary landscape is also a multiple sensorial landscape. Using Schachtel's classification (1959, quoted by Porteous, 1996), the writer employs both the allocentric senses (object-centred; concerned with objectification and knowledge) and the autocentric senses (subject-centred; combining sensory quality and pleasure).

In Aquilino's landscape descriptions, vision (which is chiefly allocentric) is crucial. He recognized the importance of vision and affirmed: "my retina was comparable, in sensitivity, to a photographic film, sensitive enough to fix plural images."¹¹ Descriptions

⁸ "Tudo no mundo é uma cadeia, hoc propter hoc. Sucedemo-nos, mudando apenas de forma. A essência persiste única, inalterável até a consumação dos séculos." (Ribeiro, 1962:168).

⁹ "A alma do habitante gerou-se desses oiteiros petrificados e corgos cheios de saltos (...) A gente passa por eles, divisa-os, define-os, e se sabe deduzir, conclui: é a Hispânia" (Ribeiro, 1985c:45-46).

¹⁰ "Se espreitais de longe, raro é que não voejem ou debiquem à volta a boeirinha de cauda a dar a dar, o melro dos rochedos, que é um desconfiado, a pega que é uma aventureira, a carricinha que é a mais pequenina das nossas aves e não tem medo de ninguém" (Ribeiro, 1968: 28).

¹¹ "A minha retina podia comparar-se, pela sensibilidade, à da película fotográfica, susceptível de fixar imagens plurais" (Ribeiro, 1985c: 72).

reveal space, distance, shapes, textures, lights and colours. These are elements of the landscape patterns highly related to the circadian or the annual cycle: e.g., in the spring, “heath lands are red, yellow or violet”;¹² at night, “sky and land share a similar ink, giving to things a disagreeable and fantastic volume.”¹³

Soundscapes are common. Nature has a strong acoustic dimension (which is autocentric) granted by the combination of bird songs, livestock bells, meteorological events, etc. For the writer, with the arrival of spring, these produced a composition similar to the pastoral symphony of Beethoven: “For those who want to hear it in reality, (...) come to the mountains in these days of irregular beating of the pulse.”¹⁴

In addition to sight and sound, flowers produced intense perfumes that characterize certain described smellscape (formed also by an autocentric sense): lavender and rosemary, during early blooming; wild chamomile and dock when dried, at the end of summer. At this time, the wind also brought the scent of the rye straw from fields recently scythed.¹⁵

Landscapes also communicate cold and heat, but these sensations are always associated with vision, sound and olfactory elements.

The mosaic construction

The writer constructed his scenarios dealing with both landscape patterns and processes: he was familiar with the natural and social-economic driving forces that shape and maintain the agro-pastoral environment of Terras do Demo. Agriculture and pasture dominated local activities throughout his lifetime. The former was restricted to the best soils, usually near villages. Rye fields were the most common cover in farmlands, which also could be extended to the hills, in a very low intensity exploitation regime. Its grain, transformed into bread, was the key component of the villagers’ diet. “Livestock was a prime richness,”¹⁶ the prime indicator of wealth, states Aquilino. The hills sustained sheep, goats and pigs. Pastures near villages sheltered cows, which produced milk, sold to small factories for butter and cheese.

In addition to the constraints of the natural features, Aquilino’s writings summarized the land property system, characterized by a multitude of landowners, each one managing small parcels for family subsistence. In the large majority, villagers were illiterate. The writer described a traditional rural life, maintaining manual practices in agricultural and collectivism in pasturing and exploiting water for irrigation and brushwood cutting in commons. Taking all the writings together, readers understand the complexity of the

¹² “... o mato tingia-se, vermelho, amarelo, roxo, consoante, que chegara a Primavera.” (Ribeiro, 1958b: 55).

¹³ “... entre céu e terra trocava-se uma tinta muito igual, dando às coisas um vulto desconforme e fantástico.” (Ribeiro, 1985: 198).

¹⁴ “Quem quiser ouvi-la na realidade, que não através dos instrumentos roufenhos de corda e na tilintada do piano, venha para a serra nestes dias de intercadência” (Ribeiro, 1968: 183).

¹⁵ “Branqueavam os horizontes, e das hortas e quintais a brisa trazia aromas de alfazema e de alecrim”; “Bafoeiras da aragem traziam pelos ares a moinha dos centeios padejados e o rescendor da macela e da labaga que ressequiram nos campos gadanhados” (Ribeiro, 1919: 40, 47).

¹⁶ “Em pecuária se cifrava a primeira riqueza da aldeia” (Ribeiro, 1964: 13).

described land-use mosaic: villages, paths, farmlands, forests, grasslands, scrublands, streams and altitudinal wetlands.

Villages

Villages are the organs of the territorial *corpus*. Aquilino cantered his narratives on these places, where everything is individually or socially organized. He reflected on the geographic location (why villages were set in certain places) and described traditional architecture based in small stony houses shared by people and animals, difficult water access and unhealthy conditions.

He asked: “If the village is the cell, how can the organism meet needs and function regularly, and show the required vitality, when the village remains anaemic, infirm, anchylosic?”¹⁷ These are the grounds for emmigration, he continued, in a premonition of what would happen in the 1960s when thousands of inhabitants migrated to France and Germany.

Roads and paths

The area’s roads and paths the writer called “ribs of the geographic umbrella.”¹⁸ The existing ones were footpaths, trails for small carts and a few macadam roads. They connected small villages and the fields, creating a complex network. Before the introduction of public transportation in the 1950s, travel to the central municipality was necessarily difficult and slow. Local people walked or used donkeys, mules and horses. Feeling isolation and political abandonment, people dreamed of a railroad, symbol of progress and civilization. But trains never arrived to Terras do Demo.

Farmlands

Low and long stone walls are landmarks in the landscape. Farmers constructed these structures themselves, using local material to divide or confine land and properties. The writer wrote they “interposed like laces between small agricultural parcels, and fall down with a kick.”¹⁹

Kitchen gardens, rye, maize and potato fields, orchards and pastures constitute the farmland mosaic. Descriptions of each type of culture are associated with the seasonal calendar and with the farmers’ tasks. Look for this narrative about Old Teotónio and his grandson Jaime, tilling their own land together: “Old Teotónio made a rough-and-ready measurement of the ground, and then he marked out the areas to be sown with clives, marrow and melon. Beans, which sucked up water like leeches, were to be planted round the spring. In one corner he got half a dozen beds ready for tomatoes, parsley and other vegetables. (...) Jaime with a cartload of broom and his ox-goad held high in front of the cows – the old man took a dibber and began poking into the earth the maize seeds

¹⁷ “*Sendo a aldeia a célula, como poderá o organismo ter boa conformação e um funcionamento regular, mostrar a vitalidade requerida, se aquela está anemizada, combalida, anquilozada*” (Ribeiro, 1964: 27).

¹⁸ “... *as varetas do guarda-chuva geográfico*” (Ribeiro, 1962:143).

¹⁹ “*As paredes, (...) entrepostas como rendas de courela para courela, se deitam abaixo com uma patada...*” (Ribeiro, 1944: 50).

that still shone against the black soil.”²⁰ From this example it is also shown the cooperative and familiar and entirely manual land arrangement and sowings. In the highlands, soil is difficult to dig and tools are primitive and some of them are partially homemade. The same abovementioned character Teotónio built a chiselling stone, with five steel spikes, the length of “two hands” apiece. This tool was necessary because, as the old man explains: “I’ve got some clay land up there which won’t be broken up even with a pick.”²¹

Water was another main constraint to agricultural production. It was a communal property shared by villagers according to an agreed regulation, supervised by a local respectable man, called *almotacé* (the designation has an Arab origin). Because of water’s summer scarcity and its relevance to crops, people tried to gather as the much as they could and often fought for it. The writer expressed people’s feelings by writing: “farmers call the water falling down from the sky gold”²²

Forests

As mentioned above, Aquilino felt bad about the growth of deforestation he witnessed. In the 1950s he wrote about his own experience when he looked around Soutosa, his small home village: “I look at the highland around Soutosa, a container for the winds, a birds’ paradise, and seeing it nude, I wholly grieve.”²³ Clearly, by its economic utility or by its aesthetic or intrinsic value, the writer preferred a forested landscape, and he suffered to witness the contrary.

Among trees, the writer preferred the chestnut because of its beauty and impressive size. He classified it as “long,” “big,” “emphatic” and “bushy.” Comparing it to the oak, he stated, “Maybe the oak is taller, but it is less prodigal.”²⁴

In the 1940s and 1950s, the state (in the form of the Forestry Services) implemented a new forestation policy. It consisted in the expansion of the forested area through the state’s control and management of the traditional commons (in Portuguese, *baldios*, or commons, are lands managed by local people who hold their rights in common). The commons were mainly covered by scrublands and grasslands, and had a crucial role in the subsistence of the poorest villagers for harvesting, brush cutting and pasture. Aquilino knew well projects to repopulate the highlands with pine trees and wrote about them: “If you plant trees on the highlands you may be sure that you will dangerously disrupt the highlanders’ way of life.”²⁵ But his arguments were not against the

²⁰ “*Gradada a terra, o velho Teotónio enfiou a teiga no braço a semear, tarefa que executava com gesto seguro, e tanta medida e pontualidade como abotoar o colete sem olhar para os botões e armar ferros aos coelhos. (...) depois duma arpentagem sumária da arada, traçou os quartéis do cebolinho, das abóboras e do meloal. Os feijões, que eram umas sanguessugas por água, dispô-los à volta da fonte. Num canto abriu uma meia dúzia de valadas para tomates, salsa e mais hortaliça. (...) Jaime com um carro de giestas, de aguilhada no ar á frente das vacas, o velho arranjou uma estaca e com a ponteira começou, pervagante pela lavoura fora, a empurrar os bagos de milho que, havendo ficado a descoberto, reluziam na terra negra.*” (Ribeiro, 1985c: 63, 64).

²¹ “*Tenho lá um salão que não descose a dente de picareta.*” (Ribeiro, 1985c: 233).

²² “*O camponês chama à água que cai do céu ouro.*” (Ribeiro, 1985b: 364-365).

²³ “*Olho os oiteiros de Soutosa, amparos do vento, paraíso das aves, e vendo-os desnudos, todo me confranzo por aquilo.*” (Ribeiro, 1985b: 285-286).

²⁴ “*Talvez o roble seja mais altaneiro, mas é menos pródigo.*” (Ribeiro, 1968: 10).

²⁵ “*Arborizem a serra e fiquem certos que vão bulir perigosamente com o ethos do serrano.*” (Ribeiro: 1985c: 45).

afforestation itself but about the method: “The state should raise the level of development of the villages to such a degree that, instead of looking like plundering the poverty of the highlanders, afforestation would seem an imperative and a way forward into a better and more progressive life.”²⁶

Stone lands, grasslands and scrublands

The top of the two highlands was a rocky plateau, intensely pastured. As a result, low vegetation covered them in largest part: grasslands and scrublands dominated among big stones. The writer described this stony environment, extolling its greatness and originality: “These big stones are huge like castles and plentiful like eggs in a basket. How did magma thicken there and shape those capricious spheroids forms?”²⁷ One of the most famous was Pena Vouga rock. From these boulders people envisioned a huge territory. Like others used to do, Aquilino climbed it and described landscape using cardinal points to reference landmarks and orient readers in his geographical text. Really impressed, he exclaimed: “the top of the rock is like a terrace, carved for eternity.”²⁸

The writer exhaustively inventoried bushes that constitute the main vegetation cover. By their Portuguese common names, readers can elaborate a botanical inventory: e.g., *urgeira* (*Erica australis*); *fieito* (*Pteridium aquilinum* or other ferns), *carpanta* (*Ericacea*); *bela-luz* (*Thymus mastichina*); *rosmaninho* (*Lavandula stoechas*); *esteva* (*Cistus ladanifer*); *sargaço* (other *Cistacea*); *tojo* (*Ulex sp.*). He also informed about the local use of these plants: besides being the food of sheep and goats, shrubs were a key element used during winter to cover the stable floors, after which the mixture of smashed plants and faeces were distributed and integrated in the fields’ soil as almost the sole fertiliser. Heaths were also used to produce vegetable coal. The brushwood cutting activity was described as an intense exploitation of the resource: “Nothing escapes the sharp, scythe-like edge of the hoe.”²⁹ This suggests that a grazing-cut-grow cycle dominated the plateau land-use dynamics.

Streams and altitudinal wetlands

Aquilino described the aquatic and riparian environments mentioned their lotic and lentic characteristics, the flow, the slope of the inland and edges, the water quality and the associated ictyofauna. He distinguished the three main rivers: the Paiva river is a mountain stream inhabited by trout; the Tavora and Vouga rivers have clay bottoms that are not so adequate for this species.

Besides the supply of river water for irrigation, water mills along the course of these rivers were essential elements for producing flour.

²⁶ “...elevassem os povos a um grau tal de desenvolvimento que essa circunstância se tornasse menos uma conquista sobre a pobreza dos serranos do que uma necessidade ou encontro com a vida melhorada e progressiva.” (Ribeiro, 1985c: 177)

²⁷ “Esses penedos são enormes como castelos e bastos como ovos de canastra. Como se condensou para ali tanto magma e tomou aqueles feitios caprichosos do esferoides?” (Ribeiro, 1985b: 69).

²⁸ “O topo do rochedo é como um terraço, talhado para a eternidade.” (Ribeiro, 1985b: 162).

²⁹ “...não escapam ao gume da sachola, afiada como as gadanhas do feno” (Ribeiro, 1985c:125).

Exploring cartographic information on land use ca. 1950

Once, Aquilino summarized in one sentence the face of his native region, Beira Alta: “For one hectare of plain, there are 10 of hills and stone lands.”³⁰ Could we accept the accuracy of these figures or is better to interpret them as a metaphor for his thought about deforestation and the unprofitable character of the land? The second is much more plausible. The analysis and criticism of literary texts should never forget that, even being realistic, no text is neutral: the writer makes the world personal – known, loved, feared or whatever. Still, if the reality is meant to be reflected in this statement, what exactly is the proportion of land used as farmlands, forests, grasslands and scrublands? This could not be answered by Aquilino’s writings. As enlightening as the reading and interpretation of these texts are, more compelling is the search for complementary sources of information.

Based on cartographic information, the relative abundance of each land-use category (Table 1) and the distribution of farmlands, forests and semi-natural areas ca. 1950 were assessed (Fig. 2).

Table 1: Land use ca. 1950 in the Terras do Demo core area: percentage of each category (n=16).

	%	CATEGORIES	%
Villages		Social area	0.65
Farmlands	36.9	Dry crops	25.40
		Irrigated crops	2.44
		Permanent crops	0.96
		Dry pastures	2.68
		Irrigated pastures	0.12
		Agricultural mosaics	5.34
		Deciduous trees	2.66
Forests	23.6	Pine trees	15.77
		Mixed forests	4.59
		Agro-sylva mosaics	0.62
		Grasslands	0.38
Semi-natural areas	38.8	Stone lands	0.04
		Scrublands	23.47
		Scrublands with scattered trees	14.86
		Unknown use	0.02



³⁰ “Por um hectare de planície há dez de monte e pedregulhal.” (Aquilino, 1985b: 219).

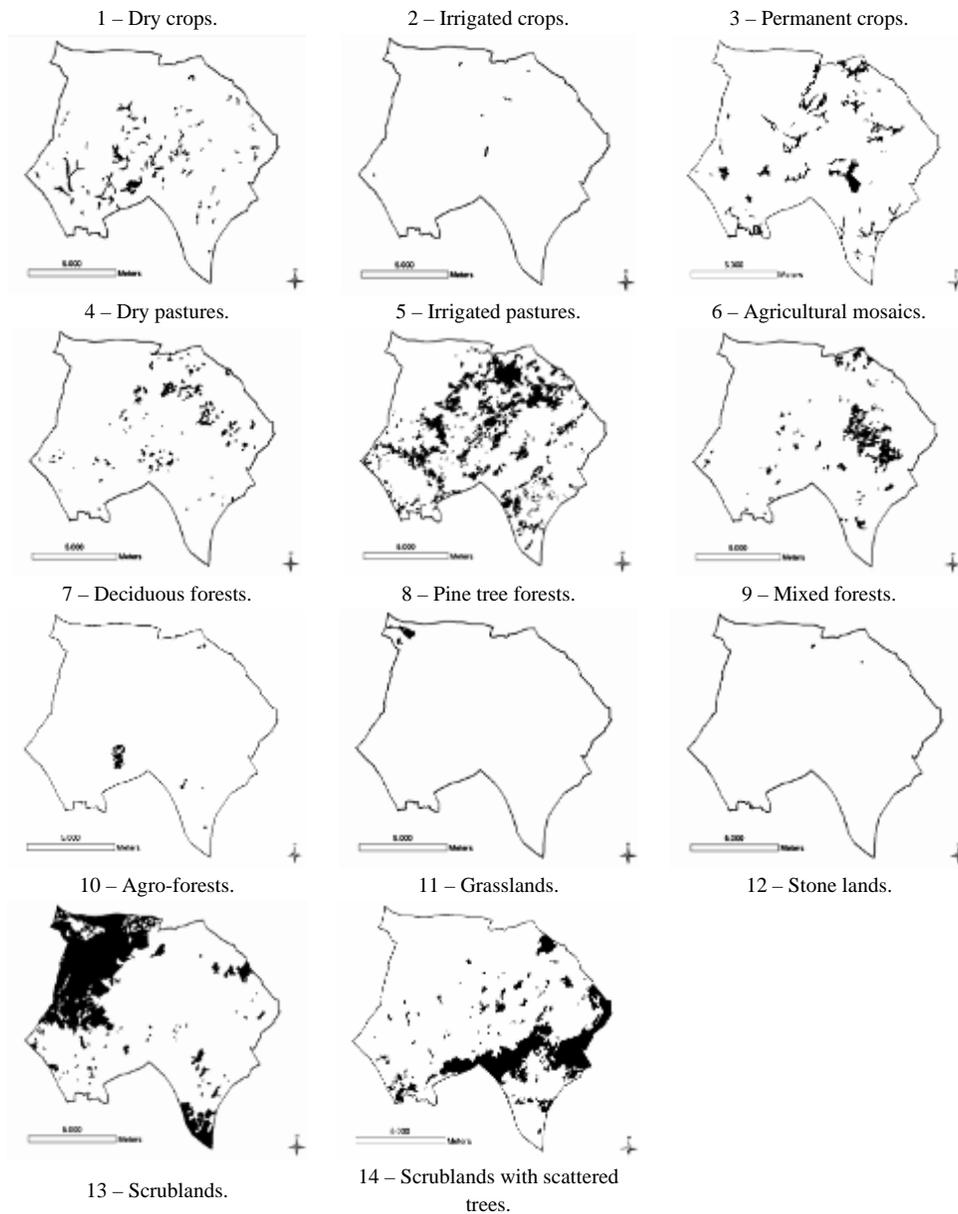


Figure 2: *Terras do Demo* land-use map ca. 1950 in categories.

Semi-natural areas, at that time called “uncultivated areas,” covered most of the high parts of the territory (in both the Lapa and Leomil highlands) and were the dominant cover (38.8%). While Leomil was almost covered by scrublands, Lapa was predominantly covered with scattered trees. This could be the result of a relatively lower altitude (1000 vs. 900 meters) or a different intensity of pasturing.

Farmlands covered almost all the slope areas and valleys, near villages. Farmlands total 36.9% of the area, two thirds of it corresponding to the dry crops. These were rye, maize and potatoes, in different proportions according to the local conditions. Farmland also comprised fallow areas that have not yet been quantified. Relatively reduced areas of other farmlands categories were scattered throughout the territory. Orchards, vineyards and olive groves occurred on the northeastern part of the area, a warmer valley also with the best soils. The second comprises areas in which the size of the parcels was so small (less than 0.4 ha) that different annual crops or pastures were mapped together.

Forested areas covered 23.6% of the Terras do Demo core area. Pine trees were more abundant than deciduous trees. Chestnuts were more common in the northeast quadrant. Oak forests were rare and those trees appeared isolated or in small, non-mapped ensembles as remains of ancient woodlands. More often, pines and oaks formed mixed forests. Agro-forests are those in which the crops were sown in the undergrowth. They were concentrated mainly in the borders of the Lapa highlands near the intense dry crops area.

Summarizing information on amount and distribution, Fig. 3 shows the dominant categories of land use by quadrants. Evidence for different ecological conditions among quadrants could be explained by topographic, pedologic and climatic reasons.

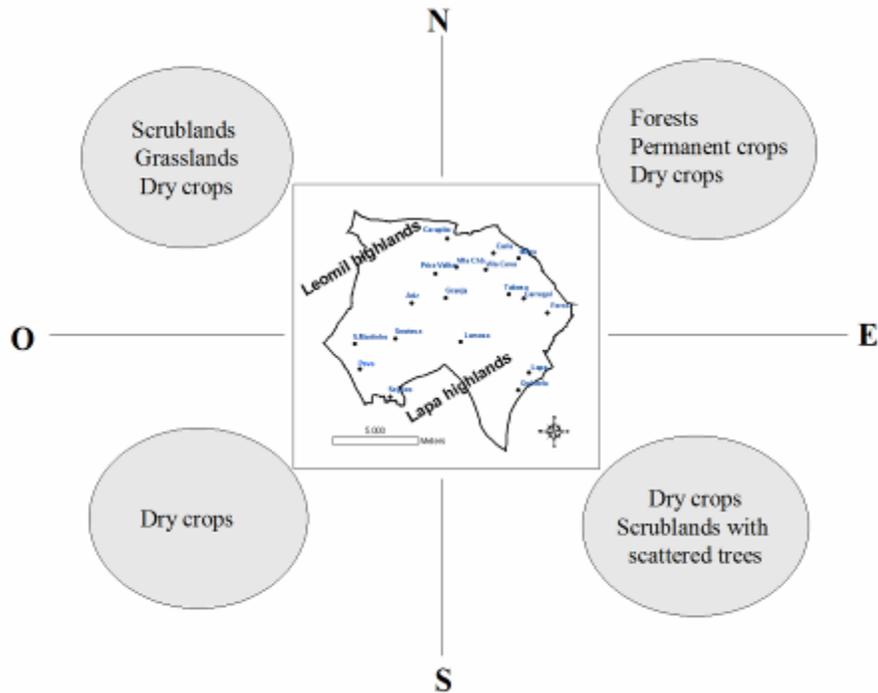


Figure 3: The *Terras do Demo* core area: dominant land uses by geographic quadrants.

DISCUSSION

Combining different sources of information

Writings and maps are complementary sources of information about space and place in the first half of the 20th century. They contribute to the characterization and understanding of the past cultural landscape. Coherent information was obtained. Aquilino never induced thought on a different mosaic than that shown in the map. On the other hand, land-use categories, their abundance and distribution have parallel in his writings. Joining coherent information details leads to a complementary historical description.

They comprise different portrayal elements (related to the content and scope of information) and differing scales and perspectives in reading landscapes (Table 2).

Table 2: Comparison of information from Aquilino Ribeiro's writings and land-use maps.

	AQUILINO RIBEIRO'S WRITINGS	LAND-USE MAP
Content and scope	<ul style="list-style-type: none"> - Landscape patterns and processes - Actors shaping landscape; driving forces; landscape dynamic image - Place meanings - Multiple sensorial landscape 	<ul style="list-style-type: none"> - Landscape patterns - Quantitative and schematic information - Landscape fixed image
Spatial scale	<ul style="list-style-type: none"> - Several scales, including small-grained elements - Concerning a fuzzy area 	<ul style="list-style-type: none"> - Fixed scale, mostly coarse-grained - Concerning a bordered area
Time scale	<ul style="list-style-type: none"> - The writer's life span and experienced memory 	<ul style="list-style-type: none"> - Fixed date
Perspective	<ul style="list-style-type: none"> - Eye-level view or an elevated position from which all salient features of the landscape can be observed 	<ul style="list-style-type: none"> - High vertical panoramic view

Writings hold qualitative information on landscape elements, some of which could be also revealed by the land-use map. Types of crops and natural vegetation are examples. As demonstrated above, Aquilino's narratives include, furthermore (1) the actors (e.g., farmers, hunters, peddlers) experiencing land and shaping landscape, and (2) the processes associated with landscape patterns, changing or maintaining them. Studying processes from the literature, "who," "when," "how" and "what" inquiries likely find an answer. From this living landscape, Aquilino's vivid descriptions help readers to understand landscape patterns and processes, and it brings out the particular relation between humans and nature. For example, there is a calendar of actions in the agricultural fields: a seasonal rotation of ploughing, sowing, tilling, weeding, watering and harvesting. Hunting, poaching and fishing are always present in these writings, not only as entertainment and leisure activities, but also as a complementary food source, and one of the relevant sources of proteins. Literary texts give a dynamic image of the landscape: as spatial-temporal product of cultural and natural interactions; as continuous changing landscape driven by known forces; as a shifting steady-state mosaic, in which

constancy in the combination was maintained by the temporal changes at each point (Turner 1989).

Maps supply quantitative information. Landscape measures related to the amount and distribution of land use in the territory can be obtained. There is a base line to compare with more recent maps, in order to describe landscape changes.

Land-use maps do not retain information on species, built structures (e.g., houses, churches, stone halls, paths) and particular landmarks resulting from farming (e.g., heaps), which are recognizable in writings. Their fixed scale contrasts to the nested approach possible from the analysis of some literary excerpts: e.g., regarding the region, the local place, the land-use type, the parcel and the species (plant, tree or animal).

Other differences concern the nature of the literary territory. Terras do Demo is a region reported in writings but, although the literature mentions villages, highlands, rivers and landmarks, it has a non-defined borderline. Conversely, map boundaries are clearly defined.

There is also a difference in the temporal scale of the two sources of information. The analysis of a set of writings published throughout almost the entire lifespan of the writer, from his youth (1918; he was 23 years old when he published his first novel) to his death (in 1963), indicates the length of his experienced memory of Terras do Demo. The study combines it with a snapshot corresponding to the aerial photos (RAF 1947). What is apparently unavailable for comparison could be assumed to be similar, as cultural and natural features were maintained almost as constants during the first half of the 20th century.

The perspective also influences landscape reading. Points of view are restricted to an eye-level view or, sometimes, to an elevated position like in an oblique panorama or in a “bird’s eye view” across the landscape. The high vertical panoramic view is the fixed perspective in maps. Advantages are obvious for quantification and to avoid distortion or hiding places by interposed elements. On the other hand, corresponding to the human gaze, the first angles of vision increase readers’ understanding and emotional acceptance of place.

Landscape changes and management

In this paper, a single layer of past natural processes and human interventions is studied: the landscape from the time and place of the Portuguese writer Aquilino is characterised. It aims to contribute to a broader study in landscape ecology, focused on landscape changes throughout the 20th century, as a tool for understanding and managing today’s landscape and biodiversity. It identifies itself with the new scientific proposals for bringing the qualitative experience of place together with the geo-scientific analysis of space (e.g., Silbernagel, 2005).

Through analysis of the three-dozen journals of Henry David Thoreau, Foster (1999) shows how readers learn about land and its ancestry but also receive an impassioned

though balanced reverence for both the wild and the cultural sides of nature. Furthermore, Foster (2002) uses this material for thinking over management options in New England (specifically Massachusetts, USA). A conservation movement calls for restoring species, habitats and attributes of Thoreau's cultural landscape: pastures, hay fields and lowland meadows, which have been abandoned and become wooded over the past 150 years. For maintaining "Thoreau's country," processes that reproduce the early effects of countless farmers and their livestock are needed.

Aquilino's writings have identified the key "driving forces" in rural land processes (socio-economic, political, technological, natural, and cultural, according to Brandt *et al.*, 1999), which strongly influenced land use and landscape after the 1950s. The writer described the beginnings and rationale of extended afforestation, rural depopulation, and improved accessibility.

More recently, Terras do Demo has begun facing land abandonment and a progressive scrub encroachment. Wildfires have become the most powerful process in shaping the current landscape. At the beginning of the 21st century, part of the past agro-sylvo-pastoral landscape is still present, although its shaping actors are disappearing, and the driving forces have changed. Past legacies and memories serve as a reference, a baseline for understanding today's management challenge. Aquilino's literature makes ecological memory tangible and reveals relevant landscape parameters. Its analysis also historically assesses concepts of nature that have come to outline current perceptions of the environment.

CONCLUDING NOTES

A landscape corresponding to the first half of the 20th century – called "Aquilinian landscape" - is characterized by an integrated study of literary representations and a land-use map. Furthermore, past natural and cultural elements retained in literature might be contribute for valuing and managing the present landscape of Terras do Demo.

Understanding landscape patterns and processes in combining Aquilino's descriptions and a contemporary land-use map of Beira Alta (Portugal) may stimulate further research on "Landscape and Literature" from other writers (nature-writers and realistic describers) and regions.

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