Abstract  The most urgent issue currently affecting the quality of lived spaces in the Western world is the remarkable spread of the urban sprawl phenomenon. This leads to irreversible loss of the main support underpinning the basic eco-systems, with special regards to the dynamic of the hydro-geological system. The presence in Italy of a complex hydrographical network comes into collision with the expansion of the urban sprawl, thereby posing serious problems for correct territorial management. The case study here considered is the low plain between the Euganean Hills and the southern Venetian lagoon. Only recently we should note the growing social demand for green spaces and attractive landscapes as river corridors actually are. This specific point of view might allow the development of a sort of hydraulic humanism, that should underpin the recovery and reorganization of Italian hydro-geological management.

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Keywords  Urban sprawl. Hydrography. Waterscapes.

1  Preface

The most urgent issue currently affecting the quality of lived spaces in the Western world is the remarkable diffusion of the urban sprawl phenomenon. The major concern is the huge consumption of land, most of it valuable fertile land designated for agriculture. This leads to irreversible loss of the main support underpinning the basic eco-systems, with special regards to the dynamic of the hydro-geological system. We are in the presence of the arrogance of hybris, the un治理able force of individualism which does not hesitate to offend the natural order of resources, deemed to be endless, and takes a hazardous cornucopian view of the world (Camerotto, Carmel 2014).

It follows that it is almost a vital necessity to be aware of the events that affect the environmental backgrounds of our daily existences. It is therefore important to appreciate the value of the space we live in. Through
such awareness, it is easy to appreciate that something has broken in the mechanisms of place production. The intense urban sprawl into the delightful Italian countryside and the transformations that have taken place as a result of the global agribusiness have been causing numerous problems by disrupting reassuring points of geographic reference for large sectors of the population, erasing their existential ties with the places they live in and their cultural and affective roots which find their nourishment in everyday place (Albrecht 2005).

2 Traditional Countryside: Sense of Place under Assault

For some years now, the great dissipation of Italian rural landscapes has shown signs of slowing down due to the continuation of the global economic recession. However this does not mean that a wiser town-planning outlook and a more careful consciousness of aesthetic and ecological quality of rural landscapes are prevailing. On the contrary, such continuation of the crisis is increasing the tendency to break town-planning rules, seen as an intolerable obstacle to growth, especially as regards the construction of large infrastructures such as motorways, high-speed railways and oil drilling operations in rural areas of major environmental importance (as resulted in new large projects being implemented). These projects are considered to be of pre-eminent national interest and are not therefore subject to the stringent application of environmental protection laws. The recent episodes of corruption tied to the assignment of contracts, cost increase compared to estimated initial and the almost absolute power given to government Commissioners, without direct State control are all aspects that have resulted in conditions of very serious environmental injustice (Andolfatto, Amadori, Dianese 2014).

But apart from such large-scale interventions, that justifies the definition of sick landscapes is precisely the continuous accumulation of episodes of environmental degradation of restricted geographic dimensions, which are evident throughout the country, but in particular in the flatter areas, along the coasts and in the Alpine and Apennine valleys crossed by busy roads. This is a still very active urban anarchy which is also clearly evident to visitors from abroad, offensive to the eyes and the effects of which on the quality of life have been clearly underscored by extensive research (Rognini 2008). There is no doubt that the prolonged inefficiency of regional and local institutions is responsible for the lack of protection of historical landscapes and ecosystems. Everyone knows that political consensus and private interests easily coincide when it comes to investments in development projects for the profitable real-estate market, until very recently determining an irrational use of the land which backfires against the most elementary aspects of daily living as in the case of the quality
of surface and underground waters, air pollution, waste disposal and the
degradation of the country’s historical and artistic heritage (Soule 2006).
This produces a loss of sense of place and belonging to the sentimental
dimension transmitted by the landscape and impoverishes shared social-
ity, leaving a vacuum easily filled by electronic and television ‘friendships’
supplied by the global hi-tech market. These are the times of the “liquid
modernity” evidenced by Zigmund Bauman (2012), in which social forms
and living spaces flow rapidly and leave people without reliable instruments
for interpreting new realities. All that’s left is to retreat into the closed and
narrow dimension of individualism, sacrificing relationships between hu-
man beings to the advantage of competitive and aggressive attitudes. In
the specific case of environmental degradation, geographic analysis could
well consider the loss of ties between the human community and place of
existence which had been functionally organized to ensure the sustenance
and correct implementation of daily living. The rift which has occurred
has resulted in the group also losing its material references and failing to
recognize the sense of the evolutionary dynamics of its own living space.

When the countryside is transformed into a chaotic mass of hybrid ter-
ritories, incomplete and hard to interpret, where built-up environments
only respond to market logics, it is easy that, in period of recession, such
landscapes can be transformed into abandoned places, at a great social
cost and with a feeling of great suffering among the inhabitants. Until only
a short time ago, not enough focus was placed on the malaise caused by
the deterioration which is penalizing living spaces, not only in suburban
countryside areas, but also in contexts with strong rural characteristics
undergoing infrastructural projects. It is not hard to grasp the close re-
lations between ‘geographic trauma’ and ‘psychological trauma’, a far
from negligible lesion of the social and individual signification system, on
which depend the ties of inhabitants with their daily individual and social
spaces (Baroni 1998; Giani Gallino 2007). The degradation of scenarios
even further increases the malaise when it comes to intervention linked
to speculative procedures, directly traceable back to the benefits of a few
crafty investors who, with the connivance of corrupt politicians, use the
simple rhetoric that defines such intervention as “absolutely necessary
and useful to the public”.

And it is precisely in the countryside where the latest and perhaps most
bitter conflict is taking place between a development and technocratic
outlook involving the personal profit of the large (and also less large)
economic powers and a growing social demand for environmental quality,
ethics and beauty to which it is easy to relate an alternative lifestyle able
to propagate strategies of resilience preparing for an overpopulated future
with less resources (Mercalli 2011). In actual fact, the growing demand
for countryside, especially locations closest to the more or less attractive
amenities of urban systems, is in itself the cause of the chaotic spread of
housing, industrial and commercial development considering that market forces have ably managed to sneak into the rural rehabilitation process, offering easy relocation opportunities not too far from urban centres, in any case in rural contexts already affected by extensive development.

3 The Bio-regionalist Option as Strategy of Therapeutic Planning

There can be no doubt that whosoever undertakes to study the evolutionary dynamics of the Italian landscape has the heavy task of the doctor faced with a seriously ill patient, whose clinical analyses fail to yet show whether the illness is curable or whether the contamination of the illness is such as to require the use of the expression ‘terminal’. Roaming among the by now widespread diffusion of settlements, with the extension of quarries on the plains and hill slopes, or turning the gaze from the foothills towards the plains, we notice numerous and invasive worksites which consume precious farmland to transform the remaining greenery into houses and commercial and manufacturing facilities: it appears evident that the cement metastasis is at our doorstep (Ryan et al. 2010).

This leads to the loss of our right to places, important catalyst for a balanced and long-lasting well-being, for a harmonious co-existence with the universe, to acquire the capacity to live alongside others. The right to places involves ethic, as meaning that economic decisions ought to produce shared geographies, where landscapes are seen as common assets, where social practices of an aware and collaborative society make pointless the disquieting fortress-like houses, with their video surveillance and high fences, which exclude individual solitudes resting in their well-tended lawns with respect to the rapid spread of oppressing grey concrete “beyond the hedges” (Vallerani, Varotto 2005). Urban sprawl kills places, reduces them to goods; they are of interest only if they generate income. More than part of well-being needs, they belong to the more brutal ‘well-having’. How many felled trees, covered ditches and fields lost forever under concrete crusts, in turn obtained from sands and gravels stripped from rivers and hills, are to be found in the Italian countryside? How much suffering and anguish for the traumatic loss of places of the heart, how strong the need to give voice to the ‘invisible’ defenders of common wealth, unheard and despised by the powers that be? (Preve, Sansa 2008). All that is left to us is the instrument of the written text, the power of the pen, whereby to launch messages of resistance and make people understand that the recent and continuing condition of economic recession is dramatically showing that the certainties of the single thought.

By now many insights have been developed, well highlighting how tra-
traditional growth indices do not automatically and univocally show parallel improvements in the quality of life. It is no chance occurrence that over recent years, well before the current recession, economists had started to address issues traditionally deemed to be implicit, such as happiness, residential satisfaction, quality of social relations, social capital (Layard 2005; Cannone 2012). Only an aware and participated interpretation of local geographies, also bearing in mind its global interlinks, makes it possible to appreciate the extraordinary cultural, civil and community (as well as ecological) importance of a new way of approaching projects and town planning: from this aspect derives the need to ‘take care’ of everything that contributes to the life of the unrepeatable uniqueness of places, as regards their specific, traditional, memorial and affective traits (Scott et al. 2013).

In such a context of continuous erosion of the environmental quality in the Italian countryside, and consequently the substantial decline of natural and cultural values compared to production values (i.e., those linked to artisan-industrial dispersion and the proliferation of intensive monocultures to the detriment of quality farming polyculture), the most discerning and proactive geographic research paths (Dematteis, Governa 2005; Magnaghi 2010) are focused on what is left of rurality, with plenty of attention dedicated to the unexpressed potential of territorial innovation remaining in those same marginal and declining sectors. And in fact, advantageous considerations can be made based on what has been happening for a few decades now in abandoned rural sectors as a result of the Italian industrialization process.

In the case of traditional villages discreetly close to centres with urban functions, it is possible to witness an interesting tendency to counter urbanization, with the promotion of the suggestive functional rehabilitation of such territorial situations, above all in relation not only to the growing demand among the public at large for a better quality of life, amenities and a healthy environment, but also for a nostalgic need for the past. So it is that the current discourse on geographic ‘marginality’ envisages the rehabilitation of the most particular and suggestive aspects, which had instead been completely denied during the most dynamic phases of urban development, that is when the rural contexts were seen as a simple space-support for highest-profit strategies, blurring and declassifying deep-rooted ties. These are the preconditions for the gradual defining of a territoriality of transition between urban and rural, wherein the aspirations for a better geographic quality increasingly associate with the countryside: here will be possible regenerating organic farming, leisure activities and finally the cultural growth provided by sustainable tourism and farm tourism facilities (Borghesi 2009).

As many abandoned European landscapes show, it is easy to encounter those “middle landscapes” (Marx 1987), that is an interpretative skill effectively used by Mauro Varotto in his work dedicated to the abandoned
landscapes of the Brenta canal, an isolated pre-Alpine valley, located however only a few kilometres from the most dynamic urban sprawl centres of central Veneto (2007). Of these intermediate landscapes one grasps above all the hybrid nature, the mix of archaic survivals and digital connections, including the seasonal densification of tourist population and the temporary presence during weekends of owners of holiday homes, with the subsistence vegetable gardens of elderly insiders and the recovery of top-quality locally-grown produce with the conspicuous contribution of capitals by amateur and motivated neo-rurals (Van der Ploeg 2009). It is therefore possible to grasp how individual prospects for the safeguarding and promotion of precious territorially and the delicate carrying capacity of the portions of countryside still existing in Italy, and with special regard for contexts of urban extension, require not so much generic and ambiguous strategies suggested by the now tired rhetoric of sustainable development, but rather an aware re-composition of the environmental and human heritage. Such option, for the purpose of restoring life to daily authenticity, besides availing itself of the profitable contributions related to neo-ruralist dynamics (the already-mentioned amenity migrants) could promote and facilitate a return to the land, even appealing to young people, thanks to effective political decisions and shared and articulated planning actions that could be implemented with the support of the European community and central governments (Resina, Viestenz 2012).

Here the matter obviously encounters political decisions to which suggestions have been launched for some time to escape the rigid patterns of a single way of looking at things. Among the many existing possibilities, it suffices to mention here bio-regionalism, wherein focus is placed on the personality of places and ecological identities, leaving on the tables of technicians the arid and false objectivity of the regional technical maps, where landscapes are silenced in the name of Euclidean certainties. This is a challenge that could also involve the most compromised sectors, recovering and mending sceneries and re-listening to the weaker voices, giving back dignity to the marginal elements like ditches, hedges, dirt roads, abandoned railways, mills and the whole rural built heritage (Iovino 2016). The path towards the setting up of bio-regions has for some time been recognized as one of the most effective means for the implementation of suggestive “local projects” (Magnaghi 2010), a complex theoretical process that began with highly praised participated planning and which in a homogeneous territorial context could find some fruitful realization. By other scholars of bio-regionalism, it is seen as a “strategy of survival” which the more modest and vulnerable local realities must adopt just as soon as possible to address the spread of the less positive effects of globalization (Lynch, Glotfelty, Armbruster 2012) and in this sense, we must start precisely with ecological specificities and with traditional forms of subsistence to be promoted in a harmonious coexistence with the strength of economic driving forces.
Recovering Waterscapes

Another geographic ambit where the pietas of places could trigger concrete actions relating to environmental recovery and gratifying restitutions of territoriality is the waterscapes heritage, including both natural and artificial waterways. The presence in Italy of a complex hydrographical network, of great interest from the historical and environmental perspectives, comes into collision with the expansion of the urban sprawl, thereby posing serious problems for correct territorial management. Up to a few years ago these water landscapes were undervalued, but recently we should note the growing social demand for green spaces and attractive landscapes as river corridors actually are. Such revalorization process of water landscapes plays a relevant role not only in urbanized areas but also in the sectors of the lower Po Valley Padana plain that were transformed in the past by large drainage projects to make the land suitable for agri-business.

These are particularly significant opportunities in the contexts of more intense urban expansion, a kind of environmental corridors where river landscapes show signs of the centuries-old interaction between nature and culture. Qualifying the river stretch as a ‘cultural corridor’ also expresses an innovative and more aware approach to territorial planning, to the extent that in those countries where industrial change first took place, and therefore where evolution has been less traumatic, as in the case of the UK, Belgium, France and Germany, the rivers and linked internal navigation waterways have, for over half a century, been at the centre of strong planning commitment towards protection, restoration and tourist and recreational re-use (Bristow 1988; Cotte 2003; Shill 2011). Particular attention must be given to drainage systems flowing in areas of greatest proliferation of urban sprawl, i.e., Northern Italy, above all due to the absence of an equally widespread wise coexistence between hydrological dynamics and expansion of development projects, especially in the light of the growing social demand for leisure-time environments. Unfortunately, in this respect, a decisive taking up of positions is still lacking on the part of local authorities to plan the complexity and conflicts which affect the current relationship between human needs and water courses; in fact, only isolated and spontaneous initiatives have been implemented in this sense by local committees and environmentalist groups.

One of the opportunities for effective and easy recovery strategies can be deemed the growing interest for sustainable recreation and excursionist tourism; in this sense, major cases have occurred of the expansion of positive perceptions with regard to riverscapes (Prideau, Cooper, 2009). Good examples are the cases of the rivers Po, Sesia, Ticino, Adda, Brenta, Sile, Piave: each one runs in Northern Italy and large stretches of their courses have been involved in initial timid projects for the physiognomic and functional rehabilitation of river channels. New ways are therefore
being expressed of looking at the landscape and its protection, in order to look after public assets, to which must be added a gradual rediscovery of the recreational opportunities offered by this extensive water network. In this sense, the conditions of territorial marginality in which a large part of the water system finds itself within Italian urban sprawl could well show itself to be an unexpected strong point for creating attractive strategic scenarios within which to collocate an adequate and mature promotion not only of specific river contexts, but of all the chaotic urban sprawl which so penalizes the scenic and ecological quality of a large part of the most densely populated sectors. We must therefore be convinced that the recreational requalification of waterways plays a lead role in the complex dynamics of territorial competitiveness, inasmuch only a pleasant environment, protected as far as its ecological cycles are concerned, is able to provide residential and existential gratification and stimulate the serenity and confidence of citizens of the future.

5 Minor Rivers and Historical Canals from Euganean Hills to Venetian Lagoon

As well as the main rivers, it is equally important to take into account the dense network of smaller rivers, especially when flowing through the peripheral fringes and therefore considered more as an obstacle to housing development than as an opportunity to restore the environmental quality of landscapes. The smaller rivers are also part of the memory of these places, with a rich repository of history from which we can learn useful lessons on the negative impacts of an untidy and regardless human presence. Historical documents enable us to reconstruct the evolution of relationships between the local population and the hydrographical network: this could prove to be a valid starting point for a regeneration of river landscapes that is particularly challenging along waterscapes in urban sprawl. This specific point of view might allow the development of a sort of hydraulic humanism that should underpin the recovery and reorganization of Italian hydro-geological management.

The case study here considered allows us to deal with a specific territorial asset where environmental evolution is narrowly related to Venice spreading in mainland, after subduing flourishing city-States like Padua and Vicenza. The low plain between Euganean hills and the southern Venice lagoon was actually a strategic area where a complex hydrographic system had been adequately managed since the twelfth century in order to foster inland navigation connecting the thriving markets of the above mentioned Vicenza and Padua with the port of Chioggia. Clear evidence of the importance of these connections can be seen in the increasing demand
for slabs of trachyte for use in the flooring of calli (roads), campi (squares) and fondamenta (quay sides) of Venice. For centuries, the quarries of Monselice and Lispida supplied stone, contributing to the spreading and consolidating of Venice’s materiality.

The consolidation of the complex waterways network in the area is the result of relevant engineering interventions affecting the lower Bacchiglione and Brenta rivers, whose natural water flows were constantly regulated in order to improve both commercial navigation routes and land reclamation. At the core of such hydrographic setting, the Battaglia canal was dug at the end of twelfth century, joining Padua to Monselice, a relevant stronghold defending Paduan southern borders. This canal allows in turn the strategic connection with Venetian lagoon through effectual waterways fed by Bacchiglione river runoff (Vallerani 2013).

From archive sources, a very close relationship between hydrographic network and socio-economic dynamics emerges, with special regard to the progress of hydraulic engineering, aimed at the agronomic reclamation of vast marshland areas eastward Euganean hills, with the subsequent effectual construction of a productive countryside. In such territorial reorganization, nautical relations should not only be related to the specific complexity of the hydrographic network, but also to the well distributed presence of modestly sized residential settlements, mostly located near the banks of lower Bacchiglione and Brenta natural rivers or pretty close to artificial canals (Cosgrove 1993, 135-62). Such tiny waterfront villages were the knots of a vernacular network of spontaneous and local based system of relations (not always well documented), where the practice of navigation involved short haul transport, within a single day, most frequently related to the daily needs of riverside life style (transfers from one side of the river to the other, fishing and hunting, collection of marshland herbs and reeds, domestic transport), rather than longer haul traffic.

Such elements are still detectable in contemporary landscape features, allowing a profitable scoping of tangible heritage worth to be preserved as relevant territorial assets. There is a plenty of cartographic documentation between the sixteenth and eighteenth century attesting the peculiar amphibious territoriality between the Euganean Hills and the Southern section of the Venice lagoon, where a thriving system of minor navigation routes involved modest rural villages such as Pernumia, Cartura, Cagnola, Bovolenta, and Correzzola. These were effectively infrastructures with significant and articulate physical features, whose nautical service intersected narrowly with the aims of reclamation and irrigation, thus showing the intrinsic features of an effectual and well-planned waterscape.

This short-expanded stretch of low plain shows most of the hallmarks of a bioregional unit, that is a geographical area that can be described as a specific combination of ecological assets, geomorphology, climate and hydrographic network, where communities developed over the centuries.
the formation of specific rural landscapes. In the case here considered water features not only can be take into account as boundaries of a distinct territory approximately bordered by Battaglia canal, Brenta and Adige rivers and lastly the southern edge of Venice lagoon, but also as a relevant environmental and cultural heritage. Here hydrography is furthermore the main track to follow in order to recover the huge repository of intangible heritage strongly connected to irreplaceable fluvial stories.

It follows that the primary source of information, maybe the most active and generous in detail and nuances, is the powerful narrative of people from this very land, who provide valuable testimonies in the attempt to reconnect social contexts torn and scattered by the indifference of man and time. Up until a decade ago, a sizable group of former boatmen were able to tell their lived experiences and help reconstruct navigation events regarding the inland navigation network. Their vivid memories provided a wealth of valuable oral sources to gain detailed information about life on board, nautical skills and manoeuvres, and the names of boat equipment and items, all of which made possible the collection and protection of their peculiar sailor lingo.

Such retrieving of intangible memories can be evaluated as the first step for the further recovery of traditional boats and other objects related to navigation and as a consequence since the eighties of last century a relevant deal of material culture has been accumulating that were stored in an historical building in the Battaglia village, right close the canal. The Museum of Battaglia thus stands as a pivotal hub for the enrichment of an identity that expands throughout Veneto’s lowlands and even further within a broader European cultural movement, aimed at the educational and touristic rehabilitation of the ancient waterways that went out of service following the decline of commercial navigation. Such initiative would lead to enlightened planning engaging the broader regional contexts characterised by the vast and ancient fluvial networks employed by man, as is the case of Veneto’s lowlands. This new project would aim at rebalancing the geo-economic arrangements responsible for the considerable waste of resources and environmental degradation that has occurred in the recent past. Within this perspective, museum institutions entirely similar to Battaglia’s have been playing a primary role in recovering the memory and dignity of ancient ways of existence and complex fluvial skills, with the purpose of transmitting them to new generations and political and technical government bodies.

What appears therefore is a new way of calculating the environmental accounting, a glimmer of hope not to be ignored in order to achieve an authentic quality of life, more reactive to the appeal of hyper-consumerism and more closely focused on the theme of happiness, aiming at the recovery of social relations, residential satisfaction and the beauty of landscapes. The key to achieving all this is to return, in our daily lives
and political decisions, to ethical commitment and recalling the duty of responsibility in order to transform the easy flattery of immediate benefits into more long-term strategies envisaging the sharing of common duties (Jonas 2009).

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