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culturales y
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The social perception
of landscape in
networked digital
media: the contribution
of the human and
social sciences

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Introduction

The general premise that underpins the present work is that today, any area of knowledge that is integrated into landscape studies is developed in digital culture. In digital culture, social networks and the Internet are important for forming opinions, interpretations, identities and imaginaries that are part of the social perception of reality, including cultural landscapes.

Under this premise, we will, firstly, carry out a brief examination of the origin and evolution of virtual ethnography, in which the most interesting questions are those that might evoke a 'virtual' or 'digital' vision of the discipline. Next, we will address its convergence with other heritage- and landscape-study-related disciplines such as history and geography, as constituents of the digital humanities. This analysis will highlight concepts and practices that can be applied to landscape studies. Lastly, we present a model to methodologically integrate these (digitally and network mediated) disciplines into landscape studies.

Given the eminently transdisciplinary approach used, the general premise should be understood as every area of knowledge that is integrated into landscape studies

today being developed in digital culture. As such, networks and the Internet can be concluded to play a substantial role in forming the opinions, interpretations, identities and imaginaries that are part of social perception.

New modes of social research mediated by digital technologies

The digital technologies and, more particularly, the phenomenon of the globalised Internet since the mid-1990s, form a typical postmodern 'ecosystem'. In this context, the boundaries between human and machine, reality and virtuality, often become blurred. This peculiarity has become the study object not only of engineering fields and other technological disciplines but also of the human and social sciences (Hine 2004).

Anthropology includes a dual vision of digital technologies such as the Internet: as a proper culture that is part of daily life, social relationships and our world position or vision; and as a cultural product that considers 'everything that people create, do, say, think or experience with bits' to be digital culture (Ardèvol and Lanzeni 2014, p. 14).

This situation, which depicts some new modes of social research

mediated by digital technologies is bound to have repercussions for landscape studies. Any possible approaches to a multifaceted object such as the landscape are by necessity multidisciplinary. This difficulty has not been satisfactorily resolved by positivist scientism's exclusive disciplinary visions through the "unique" optics of the natural sciences, biology and geomorphology, in addition to economics and geography.

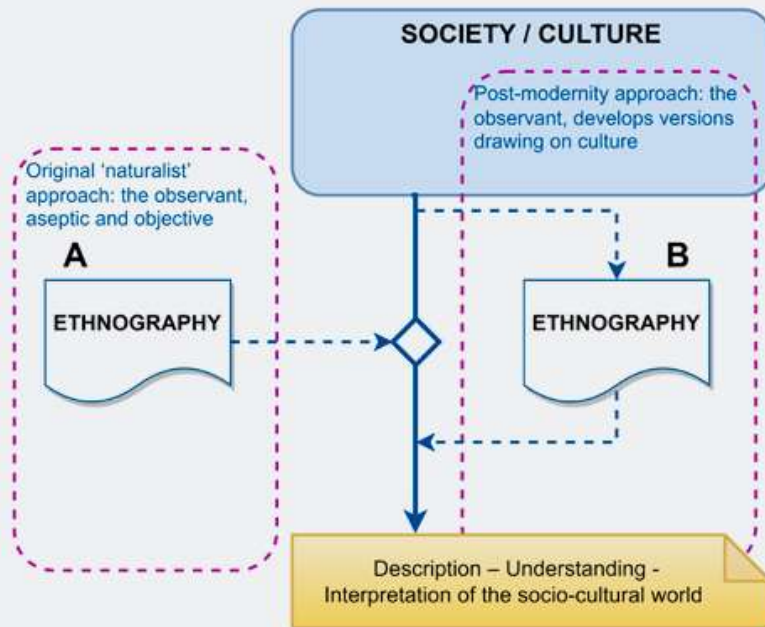
Alternatively, focusing on the landscape as an object of ongoing social construction that can be scientifically explored from many other points of view (cultural, historical, geographical, artistic, environmental, architectural, economic, psychological, etc.), doubtlessly favours the idea that the landscape should be addressed in all its complexity. On the one hand, the landscape can be recognised as a material object, an 'entity that exists' and incorporates the intrinsic material part of traditional "positive" knowledge. On the other hand, the landscape is also a social (or "fashioned") object, an "entity that does", and which, therefore, also incorporates the human being as a constituent and necessary agent. This human agent is active. It makes decisions, is dialectic because it is affected by its position on a specific social,

economic, cultural, political map, and historical because it acts at any given moment with answers to what has been learnt from the past.

This social link as the binding agent of a way of acquiring scientific knowledge has enabled the growing influence of the social sciences to be evaluated in a variety of disciplinary fields since the 1970s. Through ethnography, anthropology studies social change, and the formal and symbolic cultural life of societies in their various dimensions (ecological, economic, political, religious, etc.). For these disciplines, the landscape is, therefore, an emerging study object, a 'social construct' to which they can apply their own methods and techniques, which are also influenced by contemporary changes in technology.

There has been an ongoing debate within anthropology itself and ethnographic techniques since the mid-20th century. This discussion has spanned issues from the role of neutrality or interpretative asepsis of the individual undertaking the research, to the opening up of increasingly fragmented new fields. In parallel with this, the phenomenon of 'globality', mixture and ubiquity of cultures or cultural forms has become much more evident. In short, a crisis occurred in the classic eth-

Ethnography: traditional model and critical model



Traditional 'naturalist' model (A) and critical model (B) of ethnography from the last quarter of the 20th century. Prepared by author based on Hine (2004)

nographic model in which research was assumed to always be realist and objective concerning the description, interpretation and conveyance of what was occurring (Hine 2004, Guber 2011), to the point that, in the present day, 'reality' is considered to be by necessity constructed and affected by the disciplinary compromise inherent in ethnographic practice.

One final component of this still ongoing debate is that, at the end of the 20th century, humanity was poised on an unparalleled technological threshold, with the consolidation of digital information and communication media, especially the Internet, as fast and accessible vehicles with which to influence a change on all levels of the model of social and cultural relations that has touched every aspect of daily life. It could be said that, in a new context mediated by the new digital technologies, there has been a transfer of the concepts in socio-cultural relations and representations:

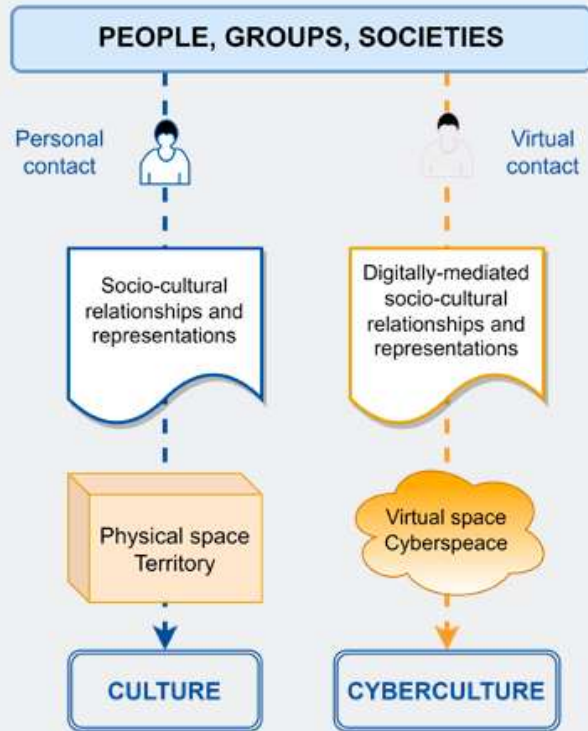
- On the one hand, contacts with agents that were previously personal or direct have become virtual.
- On the other hand, socio-cultural relationships are now produced in a new 'de-spaced' context, where the place and territory are now a virtual space or cyberspace.

• Lastly, a new concept is being shaped: cyberculture, which encompasses the cultural relationships, content and meanings that are being forged and produced in said cyberspace. The effect of this is that the Internet itself can be considered and studied both as a culture and a cultural product.

This new concept of ethnography addresses, firstly, the issue of direct interaction; secondly, the processing of source documents in new textual forms, and thirdly, the composition of an object that is delimited spatially or virtually.

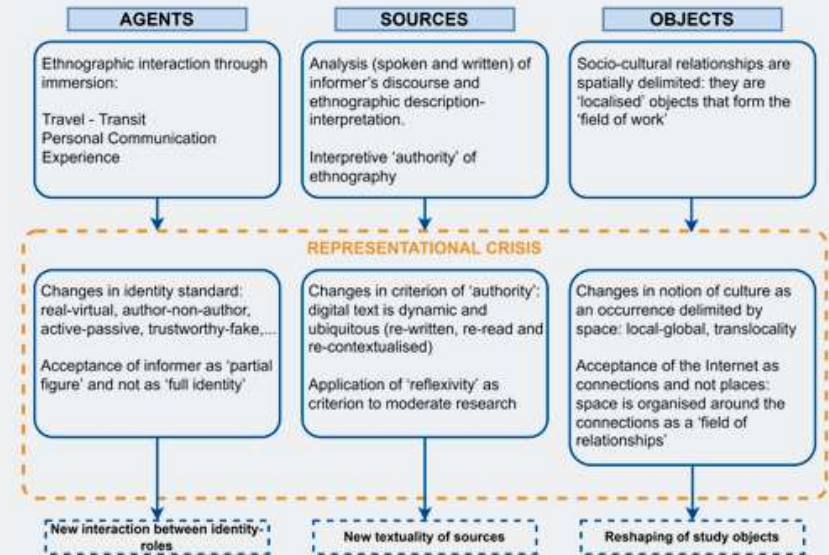
Thus, individuals involved in authoring and reading texts on the Internet are also agents of the construction of cultural meaning. Ethnographic research could be situated in one role or the other, with the reflexivity tool applied as a strategy that would palliate this different experience of interaction in digital mediation. Reflexivity acts as a counterweight to 'absolute' objectivity in a compromise that seeks to maintain the criterion of the authority of the individual conducting the research. Lastly, the object or field of work always used to be assigned to a physical place but now the object is modified in a way that goes beyond spatiality. The proposed strategy is to consi-

Differentiated models of socio-cultural relations



Differentiated models of socio-cultural relations according to the availability of the mediated digital environments. Prepared by author based on Hine (2004) and Mosquera (2008)

New modes of representation in ethnography



New modes of representation in ethnography resulting from the impact of the technical mediation of the Internet. Prepared by author based on Hine (2004)

der the Internet as a space made up of flows and connections, in the way that other authors interpret the globalised world (Castells 2005).

History and geography in the digital humanities framework

Aside from the early stages of the Internet, which came into use in the 1970s, and bearing in mind that the foundations of the World Wide Web were laid in 1989 with a set of standards (HTTP: hypertext transfer protocol), the starting point of digital humanities has conventionally been established at the beginning of the 1990s (Pons 2013), when the global use of browsers as we know them today was consolidated.

At the outset, the areas of knowledge linked to the humanities fundamentally practised 'humanistic IT' tightly focused on the use of digitised documents, but this has now given way to a transversal 'digital humanities' concept that is extremely adaptive to the possibilities of technological innovation. Uses and specialisation can be found in traditional and emerging fields: from pure research to didactics and scientific dissemination, from digital literature and digital archives and libraries to the geospatial analysis of historical places and territories, the use of big data and the analysis

of the social networks themselves in web 2.0.

The open debate around a conceptualisation of the digital humanities has engaged a diverse range of areas from the academic to the entrepreneurial, from the expert to the popular. This process has enabled several areas or spaces to be shaped in which advances can be recognised (Romero 2014). Firstly, we should highlight the development spaces in which the needs for interdisciplinarity, training, knowledge generation and collective sharing, and the importance of their social impact, civic or public, as an end goal, are being shaped. Secondly, areas of conflict that make the lack of academic recognition and the effort of visualisation visible for non-English-speaking groups or projects should be taken into account. Lastly, experimentation spaces are important for having produced joint initiatives between academia and 'the commons' such as 'media labs' and collaborative e-workshops, which demonstrates digital's capability as a new vehicle of content creation, knowledge and even human science didactic or ludic experience.

This forming of common spaces (for development, conflict and ex-

perimentation) in the digital field is similarly shared by history and geography, given their focus as social sciences and part of the humanities.

The practice of history in the digital humanities

In recent times, history has undergone a similar evolution regarding conceptual, methodological and technical repositioning. Besides the above-commented issue regarding theoretical references, a notable feature of recent historical practice has been the broadening of the subject matter to take in previously undervalued matters or aspects, which has led to a feeling of disciplinary atomisation or fragmentation. Areas that stand out include historiographical interest in individual histories or the rise in the biographical genre, microhistory, gender history, the history of specific occurrences, ethnicities and communities, activities and professions, customs, objects and utensils, places, families, private companies and corporations, etc. Similarly, there has been a noticeably enormous increase in the quantity and diversification of available historical sources thanks to the capacity of digital technology.

This last point enables a connection to be made with the emergence of so-called digital history. In general

terms, since the 1990s, the discipline of history has been plunged into the great maelstrom that is digital. Since then, this presence has generated a line of debate and reflection on both sides of the Atlantic but with practically polarised development and consolidation in the English-speaking countries (Pons 2013, Pons and Eiroa 2018, Noiret 2018).

What all these new experiences show is that digital history is not the digitisation of archives and documents or consulting libraries over the Internet. This is something beyond the mass daily use of technological tools that would make us digital historians. In this partial focus, digital activity spans practically the entirety of people who research and disseminate history, whether they have been born into digital generations or not, but who still suffer from a lack of academic recognition; and the debate within the discipline itself that addresses these changes and how they affect epistemological and methodological aspects is very limited.

If the (digital) medium has made us and the profession digital in a general sense, it would be appropriate to make a separation between that which refers to the simple use of technological resources, on the one

hand, and that which would imply a new attitude, new interpretative and explanatory models based on the specificity of digital tools, on the other.

In this sense, as some authors uphold (Noiret 2015, Pons 2018), there would be a variety of ways to approach this:

- In a ‘weak’ sense, history’s epistemological and disciplinary structure remains the same. The different historiographical currents could follow their theoretical lines in digital history as users and beneficiaries of the new digital technologies: historians *with digital*.

- In a ‘strong’ sense that still retains a large part of the above. This would entail forging a tighter link with the technologies that open up historical research to new epistemological issues. This currently involves a smaller number of professionals: *digital historians*.

In the latter sense, there would be three types of practice in digital history with the understanding that there is usually an instrumental overlap between them (Pons, 2018):

1. Data mining, and text analysis, more common in the literary study of historical works, archives, libraries and collections digitised and relea-

sed for historical research analysis.

2. Compiling, preserving and presenting the past, which not only includes interested parties of the first type but also oral history and public history.

3. The universe of historical knowledge visualisations linked to graphic visualisation, digital cartography and similar tools.

The above applies to both the process (digital) and the product (the hypertextual focus). Concerning the former, we are compelled to find out and experiment, although there is always the risk of emphasising the tools and reducing the historian’s work to a mere technical skill. Concerning the latter, text seems to be relinquishing its monopoly. There would appear to be an ongoing separation between text and narration, with written historical narration no longer the only possible representation of the past. So, along with text, and separate from written narration, other already well-known media are being included and are not being treated as a supplement or an illustration: maps, statistics, audio-visuals, etc.

[Geography: the social and cultural shift and its digital mediation on the Internet](#)

The well-known Treaty of Human Geography (Lindón and Hiernaux

2006) can be useful for exploring the discipline’s track record over the last 30 or 40 years. On the one hand, a position can be observed of interest in ‘geography’ as a science that avoids dealing with a mere description of territories. On the other hand, the gradual inclusion of the social and cultural shift can also be noted in geographical focuses, studies and practices. This has led to opting for hybridisation and transdisciplinary integration. Lastly, no particular disciplinary tradition of geography is prioritised, neither Anglophone nor Francophone (which are mutually exclusive, as can be perceived in the two bibliographies) but rather one that defends an intermediate, hybrid approach, which can only enrich the process that has taken place.

From the first years of this century, geography has seen a further increase in the application of digital technology services in addition to the already constant increase experienced since the 1980s.

Besides the technological consolidation of cartography and geographic information systems (GIS), which are the mark of an already known, standardised and professionalised previous aspect of geography, it is now interesting to highlight how immensely accessible

networked digital technologies have led to the definition of a new current called “neogeography”. Recent scientific production around the term neogeography has intensified since 2006. Monographies such as those by A. Turner (2006), D. Sui et al. (2013) and C. Travis and A. von Lünen (2016) pinpoint the different levels of treatment of this current: from the eminently technical and commercial vision of the first to the interest in the participative and social focus of the following, and the transdisciplinary and humanist vision of the last.

Despite a degree of technological emphasis leading some researchers to consider neogeography as neo geomatics or geomatics 2.0, there is also a recognition of the important social, participatory and collaborative facet that connects it to the classic problems of geography such as spatial and urban planning (Brown and Weber 2011, 2012), participative geolocation as an aid to decision-making (Goodchild 2007) and the rise in geographical information on a range of subject matter, such as that originating from the voluntary attitude of citizens (Goodchild 2008, Haklay et al. 2014, Capineri et al. 2016), etc.

Without a doubt, the cases related to the interaction between society

and space are the most interesting for what interests us here. The aspects devoted to technical standardisation, data infrastructure, geospatial media and management hardware will always be important and may be taken into consideration, but, in short, the goal pursued here is to discover how to exploit information flows from the social base to generate new geographical knowledge on landscape, places and projects, all of which are treated as the spatial frameworks that are closest to humans.

Digital and collaborative convergence in the digital humanities: capturing social perceptions for landscape studies

New ways of recording the history of the landscape: technology and networked agents

What is known as the social web (Web 2.0) has led, among other things, to the reciprocity of exchanges in a network that has been opened up and made participatory. This has had several effects on history (Noiret 2015):

- History in society: there has been a blurring of the barrier between the academic community and the handling of the past by other agents. Sources are available and open to all *en masse*.

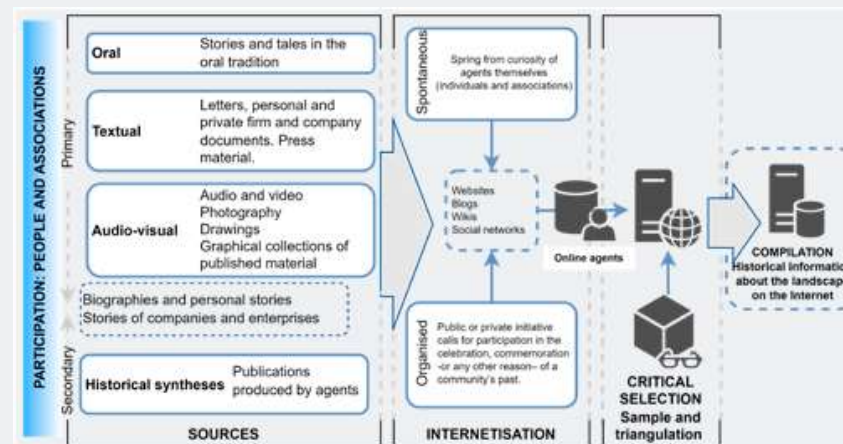
- A new relationship between creation and consumption, those who create content and those who read it. It is not that the traditionally established roles have been switched but that they are now shared.
- A major increase in public digital history projects. The ease with which large volumes of information in digital Internet archives that originate from public social memory can be made available results in a continuous and collective re-creation and re-reading of historical sources.

a) The new access modes to sources.

One of digital history's most interesting abilities is its enormous capacity to include new, unknown and high-volume primary historical banks from the moment that practically anyone can share, for example, their private documentary files over the Internet.

In this new mode of generation and access to sources, the first thing that can be observed is a thematic diversification of the primary sources, to which is added mass digitisation and online sharing. These sources, from the private files of individuals or bodies, have always existed but, generally, have only been made available to and for

Treatment of historical sources in an open network connected model



Treatment of historical sources in an open network connected model. Prepared by author

academia, and almost always with restricted access that is material, not digital.

Secondary sources are also available in this model. These represent the information that has already been processed in the form of historical syntheses generated by what could be called alternative, non-academic agents. They include histories, descriptions, historical interpretations or representations of topics and spatial areas characteristic of the non-academic historian who is part of popular culture. It also includes a mixed area of primary and secondary sources composed of material that has doubtlessly been processed but which has an unequivocal primary value for research in many cases.

These sources use the different means of sharing offered by websites, blogs, open encyclopaedias or wikis and the various social networks. All these methods make up an immense virtual store of sources -open access and online- that in the majority of cases emerge out of the spontaneity of users who have the courtesy to 'share their history'. In other cases, they may be initiatives organised by institutions or bodies motivated by commemoration or public memory and which have resulted in the discovery of novel

public and private historical material on more than one occasion.

On this basis of sources mediated by the Internet, the journey of landscape research has followed the usual steps: from access, in this case, via the Internet, to the compilation that would increase the bank of historical information on the landscape.

b) The need for analysis and historical critique

The compiled sources require a critical analysis corresponding to issues of belonging (whether responding to landscape topics or not) and reliability (regarding the veracity and authenticity of the sources) to respond to their utility in a project on landscape history.

More specific aspects concerning the study of these sources can be included when they are retrieved from the new agents on the Internet.

On the one hand, the information may have an ahistorical component. The chronology and historical depth of the territory is not perceived in the same way by the now diverse agents. Individuals and communities may understand the historical sequencing of distant moments in time in terms of ancestry as an

alternative to the academic vision. In this context, it makes sense to include mythical or legendary visions or visions that have become entrenched by the force of tradition, of the sociocultural custom that pervades the historical consciences of communities and that create their own historical self-representation.

On the other hand, shared information will reveal a diversity of interests and objects that must be visualised. On most occasions, it will be difficult to find a complete temporal sequence of all the events and explanations with the same level of intensity as would be contemplated in a model of standard history-making. The different contributions that can be found on the Internet could accentuate the amount and quality of historical information for the moments that are more recent in the memory, going back one or two generations. Also, irrespective of the nearness or distance in time of the events, each community will show its historical reconstruction with the application of criteria such as a magnification of the facts or belonging to a specific socio-economic group, for example.

c) Synthesis and transfer

The more or less specialised websites and blogs were the first to

open up to the public as alternative history channels. Apart from the common use of personal publication platforms, it is important to highlight the existence in this field of specialised software to support digital history publications.

In relation to landscape history, these initiatives should be borne in mind: in some cases, they can be focused on the detection of new source material, in others, they will prioritise the debate and are useful for the analysis of the sequence or social significance of some specific historical events, whilst in other cases, they will open up communication and eventual dissemination of the historical processes in question.

In synthesis, besides the technological advantage that is currently available, what is significant is that today, traditional history, implemented digitally by academia, coexists with another alternative type of participatory history in which the readers are also the authors by virtue of their use of web 2.0.

Territorial space perceived as a landscape: collaborative techniques and social base

From what has been seen previously, the uses and focuses that have currently been revealed by the neogeographical current can

be very useful for instigating socially focused research and action on the landscape.

The use of networked multimedia platforms such as new remote sensors to compile geographical information can be highlighted in neogeography. In this case, so-called *Social Media Geographic Information* (SMGI) offers a field of novel application for the treatment of multimedia elements or collections (texts, images, videos and audio) that offer the opportunity for geolocation (Campagna 2014, 2016).

On the other hand, it is important to highlight the emergence of the geodesign concept and method as the inclusion of a Web 2.0 tool and GIS for spatial planning and governance. Geodesign was established by Carl Steinitz (2012) with a very practical and technological orientation. It can be defined as a set of collaborative methodologies and practices on GIS that are integrated into a social technological tool but which are, nonetheless, perhaps more restricted to a selective and expert group of agents.

However, an integrated geography and society programme to support a landscape study cannot only be implemented with the generation of cartography, which is, possibly,

the most technologically developed disciplinary aspect but also from many other perspectives.

Useful digital applications for a landscape study from different sources can come from the free and diverse production of the user population or could be the product of actions induced by other agents in a networked participatory process on predetermined issues.

To cite several examples, these possible applications (Table 1) would span from the incorporation and geolocation of toponyms known or used by the local population, or the geolocated knowledge of routes and places connotated by people or groups, to the collection of information on areas with risks or threats susceptible to being the object of landscape quality measures, and also the integration of landscape planning collaborative issues such as the spatial delimitation of actions or programmes based on a geo-appeal or the use of collaborative networked GIS based on the geodesign concept.

Examples of useful applications for landscape studies

| | Objective | Proposed application | Topics | Agents | Tools |
|---|--|--|-----------------------------|---|---|
| C H A R A C T E R I S T I O N | | Collaborative cartography of main topographical elements, hydrography, vegetation, etc. essential for understanding the landscape | Physical medium | Citizenship Associations | Open maps and others mashups |
| | | Geographical descriptions | | Citizenship Associations | Geoblogs, Wikimaps |
| | Knowledge and Raising Awareness | Collaborative cartography of historical and current elements linked to the territorial communications network or basic settlements for understanding the landscape | Territorial linkages | Citizenship Associations | Open maps and others mashups |
| | | Itineraries and descriptions | | Citizenship Associations | Geoblogs, Wikimaps |
| | | Geolocation of connotative elements of landscape that are part of the natural heritage | Heritage resources | Citizenship Associations Public administration | Geoblogs, Wikimaps Open maps and other mashups |
| | | Geolocation of connotative elements of landscape that are part of the cultural heritage | | Citizenship Associations Public administration | |
| | Geotagging of local toponyms in the landscape setting | | Citizenship Associations | | |
| D I A G N O S I S | | Collaborative cartography of proposed area of a cultural landscape | Delimitation of landscape | Agent group | Open maps and others mashups |
| | Diagnosis | Location of sensitive or threatened areas and receivers of aggression and impacts | Qualification | Agent group | Geoblogs, Wikimaps |
| | | Collaborative cartography of zonal qualification of landscape according to risk indicators, state of conservation, etc. | Qualification | Agent group | Open maps and others mashups |
| P L A N N I N G | Zoning | Collaborative cartography of preferred areas for landscape quality improvement | Qualification | Agent group | Open maps and others mashups Geodesignhub |
| | Measures and actions | Collaborative cartography of landscape measures | Programming | Agent group | |
| M A N A G E M E N T | Measures and actions | Collaborative cartography of state of compliance with measures and actions | Assessment | Agent group | |
| | Territorial heritage | Collaborative cartography of proposed areas and goods for heritage protection | Protection and conservation | Citizenship Associations | Open maps and others mashups |
| | | Collaborative cartography of proposed areas and goods for conservation and/or preservation actions | | Citizenship Associations | |
| Governance | Up-to-date collaborative cartography of areas and goods in the landscape with agent management commitments | Agents and commitments | Agent group | | |

Examples of useful applications for landscape studies taken from participatory geography and listed by objective and topic indicating possible agents and web 2.0 tools

Towards an integrated digital humanities model in landscape studies

The adaptation of a landscape study model as expressed and perceived in the network can be designed and applied in successive phases in a transdisciplinary way. As a preliminary conclusion, in the following, we propose a process diagram as a methodology applied to the landscape based on virtual ethnography and its convergence with the other digital humanities.

Firstly, the agents that use the Internet have to be detected as a means of expression, as do the goals that they have for landscape or related topics. The aim is to construct a map of agents who are useful for our study and express themselves over the Internet. Prospection will focus on the network using all the search resources considered appropriate, from programmes and digital repositories to information from our personal contacts.

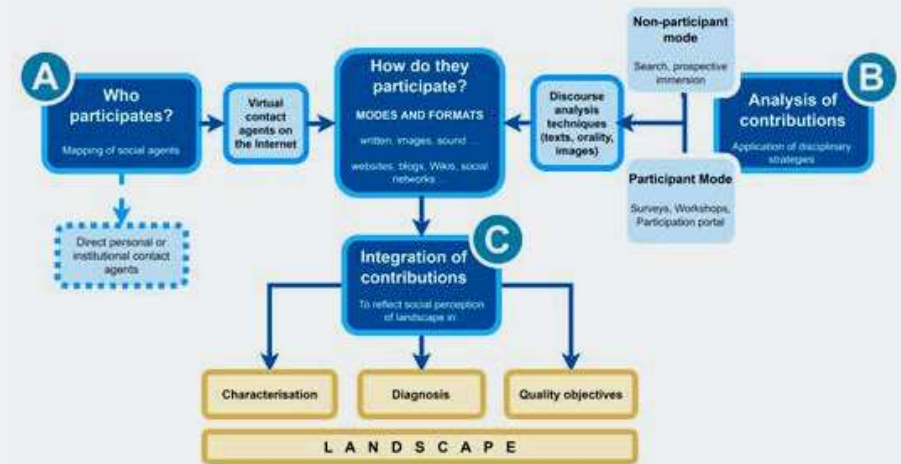
Secondly, the available information in the different media used needs to be analysed. Specifically, what is being talked about -the topics that each of the agents are addressing depending on their position; how the different agents refer to these topics -discourse analysis techni-

ques; and what convergences or divergences, presences or absences can be established concerning, for example, 'expert', administrative or academic discourses. In this case, there are several that are well-established in the world of the Internet: from personal websites, and Wiki-style digital thematic portals, to microblogs such as Twitter. Non-textual information can also be used and not only in audio-visual but also in graphical form, taken from very useful image repositories (photos and drawings).

The analysis of these sources will be determined by applying the strategies prescribed by the different disciplines (figure page 144) to meet the objectives of a socially perceived landscape study on, among other issues, historical knowledge, the definition of geographical, human or physiographical features, the structure of socio-economic activities, etc.

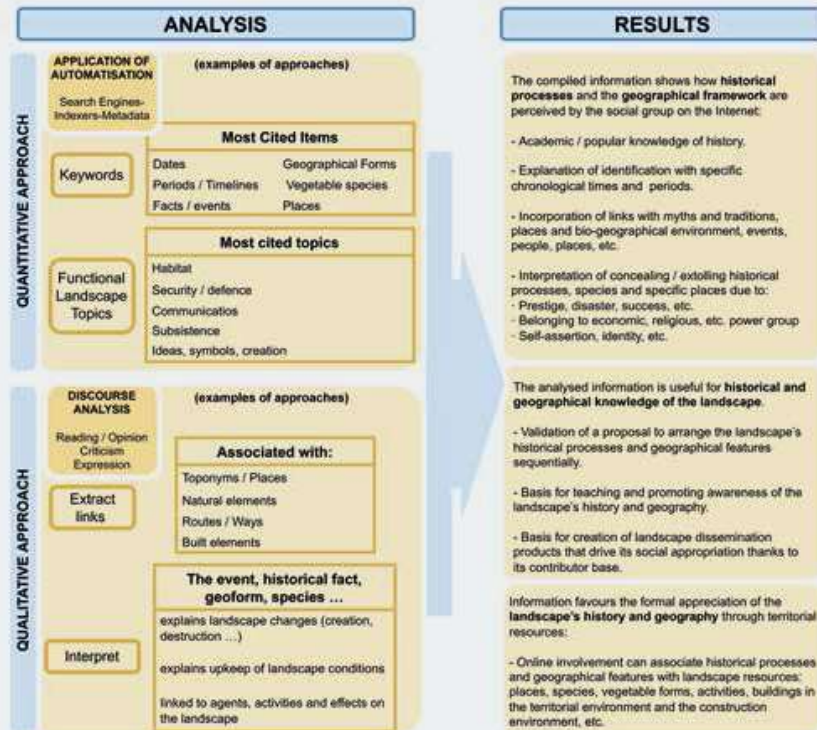
This analysis could take place in two possible contexts depending on our position as analysts: firstly, as an anonymous 'observer' of the information circulating on the network, which will be collected and subjected to critical study, and, secondly, as an active and digitally present individual recognised as an agent who drives the debate, a requester

Operative integration model of networked information sources in a landscape study



Operative integration model of networked information sources in a landscape study. Prepared by author

Proposal of analysis and integration of results



Proposal of analysis and integration of results in a landscape study of the historical and geographical information of agents available on the Internet. Prepared by author

of information and poser of questions. Quantitative and qualitative analytical strategies can be used in both modes and will contribute the more or less descriptive and/or explanatory visions that will form the basis of the contributions understood as results to be included in the characterisation or diagnosis of the landscape or the proposal of quality objectives.

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