Digital Representation of City Cultural History: Feedback on the Twenty-year Long Interdisciplinary Experiment

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1   How can cityscapes of the past be represented or expressed in the multiple hyperspace of digital interactivity? Historical cityscapes are a chapter of urban cultural history, an area which has developed in the past decades, simultaneous with the rise of humanities computing, and they interact as old maps unfold in a new way in hypermedia, revealing images and songs of the past. Based on a digital project related to eighteenth-century cities, the article will show that its development, from the mid 1990s to the present, allows us to follow the increasing complexity of the medium.

2   When engaging in the epistemological debates concerning the "digital turn" in the humanities, more particularly its impact on the idea of "representation," we should take an evolutionary approach —tracing the history of the issue over the recent decades. The interaction between the technical instruments and the definition of our fields of studies has evolved over the years; the present paper will argue that to assess the relevance of the digital medium, and to use it appropriately, the positioning of humanities computing in such an intellectual context has to be defined differently at different moments. A brief outline of major trends in theoretical approaches and concepts from the 1990s onwards follows, citing landmark works of secondary literature, so as to contextualize the project on which the paper is based: this study of the digital medium over the past three decades will focus on a research and teaching programme conducted by our research centre *"Cultures, Sociétés et Technologies de l'Information"* (http://www.csti.paris-sorbonne.fr) —the authoring of a multidisciplinary digital programme on 18th-century British cities, *Georgian Cities*

http://www.18thc-cities.paris-sorbonne.fr (ed. Liliane Gallet-Blanchard). It will offer feedback on its evolution and its uses applied to humanities studies.

3   To give a brief summary of the intellectual background against which our project took shape, and of the evolving conceptual framework, the early nineties were the first period of "Computing for the Humanities" —experimenting the uses of the new tools in various areas of the humanities ranging from textual analysis to the uses of databases in history (Miall, 1990; Greenstein, 1994); such a trend culminated in the late nineties in studies focusing on the new transfer of "information technology" to the humanities (Coppock, 1999), keeping the digital medium and the humanities separate and seeing the digital medium as an extra corpus on which to work. It was reflected throughout the decade in annual conferences entitled "Digital Resources for the Humanities."

4   The major theoretical developments were the epistemological interpretative work on the then recent "hypertext" functionality offered by computing programmes, emphasising their capacity to present numerous hyperlinks relating various documents and thus afford several non-linear paths to be chosen by the user, reflecting different ways of relating distinct topics —with the complex mapping of ideas it encouraged—, together with "interactivity" (the possibility for each user to create an original path [McAleese,1990; Delany, 1991; Deegan, 2000]). The overall structure in which the items were placed was defined as a "metaphor" summarising the relations between the items —a programme on the arts might be presented as a virtual picture gallery with rooms containing the various topics grouped like paintings hanging on the walls, and the paintings discussed placed according to artistic movements.

5   The later nineties moved towards the closer integration of "Humanities Computing" which meant that IT was seen not only as a resource but also as a tool —computing— implying a specific approach. Digital products included images and sound (now technically available, see Marchese, 1995), so that "hypermedia" developed —a book published in 1993 on the topic needed a vastly expanded new edition in 1997 (Cotton, 1993, 1997). This encouraged a spatial mapping of knowledge (Ware, 2000; Gärdenfors, 2000). The early 21st century favoured the totally integrated field of "Digital Humanities" and developed the concept of "digital culture" (Trend, 2001). "Visual culture" could now be included in the digital medium, and retrospective studies comparing digital forms of visual illusion with those of earlier media were published (Grau, 2003; Gitelman, 2003), at the same time as such new forms of digital art started having their own history (Paul, 2004; Greene, 2003, 2008). Digital visual culture brought its own problematics (Bailey, 2010), and led to models of knowledge based on digital space (Dade-Robertson, 2011). It was exemplified in fields such as "Spatial Humanities" —projects like the Lake District initiative about literary inspiration based on geographical mapping, meant to reconcile digital scientific technologies with "humanistic geography" (see "Spatial Humanities", 2012-16), and projects showcasing "transdisciplinarity" (Berry, 2012).

6   Our digital project *Georgian Cities* on 18th-century urban culture, first published in 2000 as a CD-ROM, was presented at conferences along such lines. In the late nineties and early 2000s, the emphasis was on the possibility of hypermedia to explore urban culture and its multidisciplinary facets, unfolding the various aspects and dimensions of urban studies, ranging from architecture with a visual focus to domestic life and religion based on social history approaches (Gallet-Blanchard, 2000, 2002). This was aptly summarised by a review of our programme, stating that the home screen motif —an

opening 18th century fan showing a map of Bath, so with the dual meaning of an object of fashion and a geographical plan, animated so as to open gradually— was "a metaphor" of the project because it "unfolds" like the various topics which successively open to the view behind each hyperlink (Leduc, 2001).

7   In the early 21st century, we followed the evolution of the technology as well as the conceptual framework of Digital Humanities. Technically, the web was now able to support images and sound; and programmes such as tools of textual analysis became sophisticated, so that we planned moving *Georgian Cities* to the web, adding new chapters incorporating textual studies. The use of digital research programmes as teaching support material was facilitated by the appearance of LMS (Learning Management Systems), so that in the early 2010s we moved to the web and added an online course with sets of exercises on an LMS. Again, the new medium offered fresh intellectual approaches: questions with possible choices, role-playing simulations (Rice, 2007; Cole, 2008) which suggested options of multiple interpretations. Our experiment thus followed the successive phases of the digital medium to explore the multidisciplinary complexities of urban culture.

Hypermedia as a path to multidisciplinarity: the 1990s and the millenium

8   The primary purpose of the first phase of *Georgian Cities* being to show the multidisciplinary potential of the electronic medium, it took the form of a CD-ROM started in the mid 1990s and published in 2000, allowing the viewer to relate separate approaches to urban studies, such as cartography, architectural history, social history, cultural history. We authored sections on the three major cities of London, Bath and Edinburgh. On a page representing the map of one of those cities, the user may click on buildings and thus move to a page on architectural history, but also to social and cultural history since the functional use of the buildings may be studied —a concert hall will lead to a section on musical societies and on the history of musical forms or instruments (for instance in our chapter on Edinburgh) with audio recordings, a church will lead to a page on the different denominations, and a period house will lead to sections on daily life, decoration and furniture, for instance in our chapter on Bath.

9   The context was, on the one hand, the rise of "urban studies" as a field relating different approaches —after the work of Raymond Williams in the 1970s, Mark Girouard in the 1980s, and others such as Peter Borsay and Miles Ogborn in the 1990s, or Gordon Cullen's work on the structuring of urban space dating back to the "townscape" approach of the 1960s (see Williams, 1973; Girouard, 1985; Ogborn, 1998; Borsay, 2000; Cullen, 1961, in bibliography below). On the other hand, we wished to exemplify the "hypertext" functionality developed in the 1990s as shown above, offering hyperlinks relating various documents —maps, images, texts, sound recordings— and thus affording several paths to the user, connecting the facets of urban studies.

Multimedia techniques

10   To author the CD-ROM, we assembled a team of specialists in several areas, ranging from architectural history to Baroque music, Scottish studies and the sociology of spas, meeting frequently to discuss the overall arrangement and the positioning of their

respective contributions. The authoring had to take into account the hypertext nature of the project: the contributors indicated the hyperlinks both internal to their contribution and linking it to chapters prepared by other members of the team; since the product was also hypermedia, their provided musical extracts, architectural drawings or photos of period rooms (which implied negotiating with the copyright owners).

11   Since the mid-nineties were the time when the first multimedia applications became widely available, we chose to develop the CD-ROM with the authoring programme that allowed maximum multimedia effects —Director, released in 1994— after visiting Information Technology trade fairs ourselves, and also obtaining advice from computer science graduate students. We hired a computer science graduate student to start the development, and some of our team learned the software to master the multimedia options offered and their potentialities corresponding to our cultural history project. For instance the software offers the options of creating "image maps" and "rollover images". An "image map" is a large image containing several "hot spots" on details of the image, which may be clicked to lead to comments on them; for instance a map of a city with hot spots on the main buildings, each leading to a chapter on the corresponding building with texts and images; it is a one-to-many relation. A "rollover image" is an image entirely replaced by another when the pointer passes over it, for instance exchanging past/present views of a building, or a realistic photo and a schematic diagram of the same place; it is a one-to-one relation. Technically, an image map is done by selecting areas on the main image and adding a hyperlink to each, whereas a rollover is done by adding a "behaviour" exchanging the images. Such effects have to be chosen according to the purpose and intellectual structure of the chapter: for an overview leading to subsections, the "image map" is chosen, but for a chapter giving several views or interpretations of one object or building, the "rollover" is chosen (see "Townscape and Interactive Maps" in Martinet, 2014).

12   A useful multimedia functionality is that the pages may be made of several transparent "layers" each containing an object, a structure which is not apparent at first to the viewer who just sees several elements on a page as usual, such as a map of a city with names of places, but if each element is placed in a different layer, the developer may control their behaviours separately; in particular some layers (with the element they contain, for instance a photo) may be made invisible when the page appears, and become visible when the user clicks on a hotspot: in the preceding example —a map with names of places—, a photo of the place or building may appear when the user clicks on its name, because the photo of the building has been placed on an invisible layer, with the instruction to appear when the name is clicked. This allows for a double view of cities, a general one first, then opening on closeups of details which reveal themselves, corresponding to the multiple focus and different scales of the urban experience.

13   Among the other options is the animation: authoring a succession of frames which each show one phase of a movement, as in a film, by altering the moving detail in each frame. This is particularly useful in the chapters on literary extracts, which incorporate the temporal dimension. A narrative passage of a novel tracing the circuit of a character in a city may thus be reproduced, by showing an image of the character moving on the part of the map corresponding to the journey —this is done by having a background map remaining constant over several frames, while the position of the

character is changed for each frame. This device may be combined with the "invisible layers" behaviour described in the preceding paragraph, since the places viewed successively by the character may be made to appear on the map only when the character reaches them as they are placed only in the corresponding frame: this was used for a passage of Jane Austen's *Northanger Abbey* (1803) narrating Catherine Morland's trip from Pulteney Street to the Pump Room in Bath, with Pulteney Bridge over which she passes and the Pump Room which she eventually reaches appearing successively.

14   The suggestion of the temporal dimension may also concern texts in addition to images: extracts from novels may be made to appear successively as well, as we did with Defoe's account of Moll Flanders hiding in the labyrinth of London lanes (*Moll Flanders*, 1722); we made the successive sentences of the novel, describing each leg of the journey, appear in turn on the screen as the figure of the character moves on a map of the London area. This may be combined with interactivity since the figure is drawn by the user with a pointer along the path marked on the map to cause the extracts of the text to appear as the figure reaches the streets mentioned in it (Bandry & Deconinck-Brossard, 1997). The functionality used is that of the "intersection" of spaces or objects, a coding term in the programming language used for the project: the code instructs the relevant extract from the text to become visible when the moving figure "intersects" a prescribed space on the map covering the street mentioned in the extract. This interactive animation is meant to show the consistency of Defoe's narrative technique with the actual topography of London.

15   Interactivity was also used in the CD-ROM to pair phrases in a list with images illustrating each of them, and this was meant to study social practices and etiquette: we may reconstruct the "language of the fan" giving to each position a meaning such as "Do you love me?" or "Do not forget me", by having on the screen a list of phrases each of which, when clicked by the user, makes a figure of a lady take the corresponding position with her hand holding a fan —for instance placing the fan behind her head for "Do not forget me"— the back of the head was supposed to be the seat of memory.

16   Similar effects are used to explore the history of science and technology. They may concern vocabulary: causing architectural terms to appear interactively when structural or decorative elements on the photo of a classical building are clicked. They may also interpret images: an animation showing the steps taken by an architect to draw the semi-ellipse of the Royal Crescent in Bath using a geometrical instrument (theodolite), or an interactive section calculating the different levels of a sloping bridge in Edinburgh. The map-making techniques of the time may be described, with a figure representing a map-maker using measuring tools in a London area, and an image of a map being gradually constructed as he progresses; this is again an "intersection" technique since new sections of the map appear when the figure intersects the corresponding place on the view of London on the screen. Geometrical questions or calculation quizzes may be set to the user, with a pop-up window appearing in order to state whether the selected answer was right or not.

Multimedia as an approach to urban culture

17   Our purpose was then (late 1990s) to show how the new multimedia presentation could be used to reveal the complexities of urban culture in its related aspects —

geographical, social, cultural—, and how the functionalities of multimedia applications such as "rollover images" or "intersecting spaces" could be used to study relations between different aspects of a place in a city or to provoke interactions between places and people. The most frequent feedback we had from our students was that it allowed them to have an overall view of the 18th century, rather than separate courses on social history, or literature, to which they were previously used.

18   Within this first-level representation of the object —urban culture under its various approaches, from geography and social history to visual culture— is a second level: the reflexive study of representation itself at the time —Georgian paintings or literary descriptions, allowing us to compare images given by different media between them and with our own reconstruction. We used the functionalities of the software to give visual interpretations of Georgian townscape paintings so as to bring out the practices and conventions used by artists of the time to mediate a view of cities; for instance in a chapter on perspective, we gave a mid-18th century engraving of a London square, with technical terms for the different construction lines such as "orthogonals" or "vanishing point", which, when clicked, made the corresponding construction lines appear superimposed in colour on the buildings; it was again a question of making certain elements interactively visible, and the cultural purpose was to show that the rules of geometrical perspective were strictly adhered to by the engraver —the horizontal lines of the balconies and roofs of houses on both sides of the square all converged toward the vanishing point— since the regular classical architecture of Georgian squares was well suited to geometrical representation. We also used animation to bring out the work of perspective practitioners: an animation following the successive steps of the oblique perspective view of Pulteney Bridge in Bath in a diagram by Turner made for his lectures at the Royal Academy.

19   A reconstruction of later Georgian visual culture, to mark its evolution, was that of the panorama, a late 18th-century entertainment, a circular room covered with a continuous painting representing a cityscape. We authored an animation showing each section of the London panorama successively, as a spectator standing in the middle of the room would have seen it by turning round gradually and shifting the angle of vision. This was meant to show the rise of the continuous immersive panoramic vision from that period onwards, replacing the framed view of the mid-Georgian paintings which favoured one central axis of vision. Using present-day digital media to simulate earlier drawing tools and representational media was meant to raise awareness of the imaging processes practised in the past, to make us re-live the moment of creation rather than visualising only the finished product that we see nowadays, and thus to show how the representation is a construct mediated by the techniques practised at the time. In turn, the analogy established between old and new media was meant to raise awareness of the historically relative positions of representational techniques. So it was for the simulations of scientific instruments mentioned above.

Intellectual context

20   As a background, this was the time when the new hypermedia products were discussed in terms of "metaphor" (McAleese, 1990). Generally speaking, the structural paradigms of approaches in the social sciences were discussed in terms of metaphorical transfers from one branch of knowledge to another: the "linguistic turn" meant using

approaches derived from linguistics in history or in the social sciences, next the "image turn" imported the critical interpretation of images into the humanities. Thus, reflexive awareness of representational modes of vision and their historical positioning became essential; the new media were used to promote it.

21 In the following years —the first decade of the 21st century— the CD-ROM was used by our team and by partners from other universities in courses on the 18th century, with an approach meant to illustrate multimedia history and to familiarise students with the use of new media as an exploration of issues in cultural history; it was used along with other resources such as databases of literary texts to practise keyword searches on topics related to Georgian culture, or databases of historical images to search for other images on the topics discussed in the CD-ROM, favouring a comparative approach as well as training students in search strategies, which were new as part of the development of "information skills". These educational developments needed the institutional support of our Research Centre and of the Documentation Centre of the University, coordinating the documentary policy for the acquisition of databases, and of a national network for the development of courses on information skills as parts of curricula, which were then ongoing.

22 Our work in progress, and then the published CD-ROM, was presented at international conferences, in addition to local workshops, and our presentations published in the proceedings, to disseminate our work and to have the opportunity to share experiments with colleagues —for instance the *Digital Resources for the Humanities* conference of the Humanities Advanced Technology and Information Institute of the University of Glasgow in 1998 published by the Centre for Computing in the Humanities at King's College London, or the "Humanities Computing Workshops" at the conferences of the British Society for Eighteenth-Century Studies at Aberdeen in 2000, and the American Society for Eighteenth-Century Studies at New Orleans in 2001 published online by the workshop chair in his university at Munich (Gallet-Blanchard, 2000, 2002).

23 Our work was in keeping with such trends and current approaches worldwide in the first decade of the 21st century, as shown in international conferences —the evolution mentioned above from "digital resources for the humanities" in the 1990s, keeping the digital resources and the humanities as two entities, to "computing for the humanities" and now "humanities computing" which suggests close integration.

Cities on the web as an experiment in digital tools: the 2010s

24 The next phase was moving the project to a website. This was made possible by the technical evolution: around 2000, webpages would not have supported heavy files such as images and sound recordings (at least with the web connection available to most students), and such items had to be put on a CD-ROM, but twelve years later they could be placed online since high-speed networks became the norm. We thus worked on an online version with a professional web designer, having obtained a grant from a national body supporting online learning resources; the web version was published in 2014 for the Georgian Tercentenary —the anniversary of the accession of the dynasty in 1714, which was celebrated in Britain with numerous events and exhibitions.

Web interactivity and new urban studies

25   The online version contains new chapters which reflect the evolution of scholarship in the intervening years; these extra chapters were prepared by new contributors, corresponding to more recent research in historical content or in methods: for the content, women's studies, studies in letter-writing and research on the Atlantic trade; for the new computer-based methods, computer-assisted lexicographic studies, and presentations of industrial towns since it was now possible to have 3D simulations of machines, a technical possibility we were awaiting in order to add chapters on such towns. In such a changing area, interactives were used to show the evolution of harbours with ramparts replaced by docks and to position photos of such new urban areas on maps with angles of view, to calculate equivalences between earlier forms of lighting (candles) and new ones (gas) in factories, and to problematize on maps the geographical/temporal circulation of inventions such as cast iron, steam engines and clock mechanisms.

26   The page design changed, reflecting the new visual habits of the users. In the earlier digital media, a screen had to look like a book page and be limited in length, this was the CD-ROM presentation; some authors writing on assessment criteria for CD-ROMs or websites considered the absence of scrolling as a positive point —the content should be structured so as to fit into the visual structure of one screen. Years later, scrolling became normal so that a page should contain all the material on the topic discussed — the unit of meaning should guide the length of the page; if long, subsections could be added with hyperlinks from a list of the subsections at the top of the page. So we placed all the content related to one topic on one page.

27   Simultaneously, the whole structure of the website would be visible since a hierarchical list of chapters appeared in the margin, with the option in each case to deploy the sub-chapters; navigation between topics, and between the whole and the details, was thus easily available.

Learning management systems offering new options

28   It was now possible to use the website in conjunction with a learning management system, as combined supporting materials in courses. Learning management systems by the early- and mid- 2010 years offered numerous options for a variety of exercises (Martinet, 2014). The types of activities being multiple, care should be taken to choose each of them according to the purpose, making the students aware of the approach and the representation of the object implied by the type of exercise chosen; each exercise could be used to train the students in the corresponding variety of approaches to the topics. A useful type of activity is the "pairing questions" asking the students to pair items —phrases or images— from one list with items of a second list, which could familiarise them with the Georgian social or visual environment and its classifications. This could be linking names of pieces of furniture to images of them; or names of means of transport corresponding to the economic activities of several cities, for instance; or exercises associating places of social entertainment with the corresponding cities —clubs with London and the Pump Room with Bath— meant to raise the students' awareness of the different social significances of places.

29   The activities could be authored so as to form a role-playing exercise or simulation path, casting the students in the role of a Georgian professional such as an architect or engineer. At each step, the architect-student would be faced with a series of choices between options concerning the type of building commissioned and the most appropriate architectural forms and tools for the purpose —would you choose the Doric or the Corinthian order for a utilitarian building? For a ceremonial building? According to the reply chosen by the student, feedback (pre-authored by the editors of the course for each possible answer) is given on the relevance of the answer, with suggestions for further study of the topic if necessary. This simulation game is a way of revising the building principles of the time —the orders of columns, the type of decoration according to the purpose, the building techniques. Also, asking the students to make a series of successive decisions to design a street or a building is meant to give them an active view of the past, a "learning by doing" approach to suggest visualising the position of Georgian professionals when the buildings which are the past to us were still for them a future to be built.

30   The activities could also include assignments, such as an essay in the form of a text discussing an idea, or an assignment in images: it could be used to train students in the use of image software, for instance asking them to edit a map of a city adding colour-coding according to the functions of the buildings, which implies learning both the basic techniques of digital drawing and the conventions of thematic map-making.

31   A recent step in our work is due to the now widespread use of mobile devices —tablets or smartphones— and accessibility on mobile devices is generally a requisite for an educational website. Our website is such, and this adds new possibilities of exercises: we can devise activities to be used by students as field studies, visiting the city while looking at our website on their mobile, asking them to relate the map on the website and the points of view on the streets and squares they view on location, to answer the questions or to draw their own diagrams with the image programme of their mobile device.

32   The image-making processes, including digital image-making, have their own history; practising them should involve the reflexive awareness of it, and of the way in which they mediate reality. The "learning by doing" approach can go as far as training the students in the use of digital tools such as image editing programmes, and asking them to give their own representation of the city. We may use tools such as digital image programmes or 3D programmes to reconstruct views of townscapes of the past, and we may train students in such exercises, with the dual purpose of making them explore the past, and making them acquire digital skills; simultaneously, we should reflect that such digital tools carry their own representational modes, and increase the students' awareness of it. For instance, in 3D programmes, once we have outlined the main forms of the terrains or buildings that we model, we give them textures and "shaders" —light and shadow or atmospheric effects or reflections—, which we may develop in the third dimension. They have technical names such as "Voronoï", and "Fresnel" or "Minnaert" and "Lambert" —the names of physicists or mathematicians of the 18th, 19th and early or mid-20th century on whose formulae the textures of late 20th century image programmes are based: the "Fresnel shader", named after the early 19th century physicist, controls diffuse reflected light according to the angle of incidence, the "Minnaert shader", named after the 20th century astronomer interested in atmospheric effects, controls the relative darkness of the centre or edges of objects

from the viewer's viewpoint (see "Blender", 2018). When we reconstruct 18th-century landscapes and townscapes with such programmes, we should be aware that we project on to them 19th and 20th-century mathematics.

33   The digital tools developed from 2000 onwards may thus be used in conjunction, suggesting comparative approaches to raise the students' critical awareness and digital literacy.

34   A digital project thus evolves with the development of relations between technologies and the humanities, and we should keep this evolution in the background. Digital projects in the 1990s raised issues different from current issues, and a retrospect has to take this into account. At each stage, it is necessary to reflect on the state of current tools and the state of methods and epistemology in our field, if our projects are meant to be intellectually consistent. In the past decades, the first practitioners of humanities computing had to practise both the humanities and computer science; then a second phase came when numerous programmes became available so that the practitioners had to learn how to use them but no longer how to create them; in the third phase nowadays again mastery of parts of computer science such as coding has become necessary. We should be clear about the difference —and the relation— between the digital field as an object of study itself, the uses of digital tools in various areas, and the digital medium as a tool to study a variety of other subjects. An excellent clarification was offered in October 2016 by the President of the École Polytechnique, Jacques Biot, who first shows the main topics to be covered in introducing students to the new digital field per se, and then lists the areas in which the digital medium transforms and adapts the existing tasks of universities (Biot, 2016).

35   To take contextual examples of the general evolution of digital humanities in the past decade, the relation between sciences and the arts have become closer, and the digital medium has played a major part in this increased cooperation. As far as approaches are concerned, whereas scientific methods have been used for decades in the study of the arts (physics and chemistry for the analysis of paintings), conversely the approach of "design thinking" is now used for problem-solving, a recent interdisciplinary practice favoured by the digital medium using an originally visual approach to apply it to numerous other fields (see "Design", 2018).

36   This should lead us to reflect on the relation between old and new in the metaphorical structuring of thought: new tools may be new versions of earlier tools and replicate their approaches, or they may be new and offer new approaches; the digital medium allows images to become methods for structuring thought. We should also reflect on the relation between old and new in the exercises offered by learning management systems, where the learning paths and simulation tasks are ways of giving an active turn to the exploration of the past.

37   New tools offer a variety of approaches, and it is essential to use them not only to study the object in depth —in our case Georgian urban culture—, but also to invite the students to reflect on them, writing essays based on internet searches to explore the relation between such exercises and the current schools of research mentioned above. The exercises aim at showing how the new media contribute to define methods and even objects of research, underlining the historically changing relations between the medium and the message, and helping us to approach them critically.

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ABSTRACTS

The paper studies how the interaction between the tools offered by information technologies and the definition of our fields of studies in the humanities has evolved over the years, tracing the history of the research and teaching programme *Georgian Cities* —the authoring of a multidisciplinary website on 18th-century British cities. The primary purpose of the first phase — a CD-ROM started in the mid 1990s and published in 2000— was to show the multidisciplinary potential of the electronic medium, allowing the viewer to relate separate approaches to urban studies, such as cartography, architectural history, social history, cultural history. With the next phase, moving the programme on to the web, made possible by the technical evolution of the early 21st century and completed in 2014, the project allowed for experiments in digital tools; it is accompanied by a course on a learning management system experimenting the "learning by doing" approach. The progression from "digital resources for the humanities" of the 1990s to the closer integration of "digital humanities" of the 2010s was thus followed.

L'article étudie comment l'interaction entre les outils offerts pas les technologies de l'information et la définition de nos champs d'études dans les humanités a évolué avec les années, retraçant l'histoire du programme de recherche et d'enseignement *Georgian Cities* — creation d'un site multidisciplinaire sur les villes britanniques du XVIIIe siècle. L'objectif principal de la première phase — un CD-ROM commencé au milieu des années 1990 et publié en 2000 — était de démontrer le potentiel multidisciplinaire du support électronique, qui permet à l'utilisateur de mettre en relation des méthodes d'approche distinctes en études urbaines, comme la cartographie, l'histoire de l'architecture, l'histoire sociale, l'histoire culturelle. Avec la phase suivante, le passage en ligne, rendu possible par l'évolution technique du début du XXIe siècle et achevé en 2014, le projet a donné lieu à des expériences avec les outils numériques; il est accompagné d'un cours sur plateforme expérimentant l'« apprentissage par l'action ». La progression de « ressources numériques pour les humanités » des années 1990 à l'intégration plus grande des « humanités numériques » des années 2010 fut ainsi suivie.

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