Values, Built Heritage and Cyberspace

by Sílvio Mendes Zancheti

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This article has two objectives. The first intends to discuss how the economic value of built heritage changes as a consequence of the advent of cyberspace. The article is centred on the changes provoked by the emergence of new values associated with the virtual dimensions of built heritage in cyberspace. The second objective intends to initiate a discussion on the economic, political and social implications of cyberspace for the conservation community and for its theoretical and practical framework.

Some concepts

It is important to define the concepts of value, culture and community as they are used in this text, due to their fundamental importance for conservation theory.

Values are understood as social relations. Each value exists only in relation to other values. Values are not absolute.[1] They are symbolic creations deriving from long-standing cultural practices and exist only in immaterial forms. Values are transmitted and re-appropriated over time. Each generation hands down to the next a set of values and the structural relations with which to understand it.[2] Therefore, in the long term, values are in constant transformation.

Published by Blackwell Publishers, 108 Cowley Road, Oxford, OX4 1JF (UK) and 350 Main Street, Malden, MA 02148 (USA)

Culture is defined as a network of symbolic systems that make sense to groups of people belonging to many generations.[3] As it is the product of historical processes, this network of symbolic systems is in constant transformation.

Community refers to a group of individuals who share a particular set of values independent of the cultural context to which they belong. Some communities may share the values of one or more different cultures, as is the case with Internet communities. A determined society, with a well-defined culture, may have many communities organized around specific subsets of cultural values.[4] Local communities are groups of people who share a set of values, having a determined geographical base. These communities are related to specific places and historical contexts.

The value of built heritage as a time/space relation process

The new technologies of digital information and communications created the possibility of instantaneous communication, at low cost and independent of spatial restrictions. The time of the economic, political and cultural processes has changed completely with this new possibility, as well as with the perception of the dimension 'time' by the social actors. Virtual time is very different from the time of human production and interaction. However, the social enlargement of virtual space (cyberspace) and time, brings the real time/space relations close to their virtual dimension. There is an adjustment of the real relations to the impulses, speed and rhythms of virtual relations. The historical subordination of time to space has been broken and inverted completely. Space is now being subordinated to virtual time (i.e. the human relationships adjusted to the speed of light)[5] in the development of the economic, political and cultural processes.

The value of built heritage is a cultural category profoundly determined by time and space relations. For example, the simplest description of a built heritage in the World Heritage Sites List includes, at least, the name, the place and the period of construction. However, the most important information about the element is the definition of its universal value in relation to other cultural contexts and built heritage elements. It is this value category that settles the cultural background and justifies the inclusion of a particular built heritage in the prestigious list. In the listing process of the universal values, the categories of space and time acquire the form of a specific place and a historical period.

A built heritage element, in its material form, has universal value especially when it is put in relation to other elements with different time/space definitions. The idea of cultural diversity, that gives support and meaning to the World Heritage List, is also the way to perceive the different forms of expression of the material side of human culture and its expression in time/space references.

Built heritage and local communities

The establishment of values is a historical process that needs to be continually redone by each generation, otherwise values can be lost, or accepted only by restricted groups of people. The concept of universal values, as used today, is a historical construction which has its origins in the humanist

and Enlightenment era. The reproduction of values (their perpetuation in time) is a task of communities that co-operate and share specific values inside the cultures. Since the beginning of the nineteenth century, the community of scientists, artists and art critics working with archaeology, arts and architecture has been responsible for establishing, perpetuating and developing the concept of heritage and universal values, as they are known today.[6]

The assimilation of heritage values, by larger groups of people, in many localities, is a complex political, ideological and cultural process. Heritage values are important and determinant to the dynamics of cultures, only if they are accepted and reproduced in time by many communities in an intergenerational process. They become cultural substrata only when they are present in societies for relatively long historical periods.

Heritage value is not the only type of value determined by time/space relations. It depends on many other types of values as the artistic, the monumental, the memorial, the use and the exchange value, which are defined by the same historical process. However, the determination of values is fundamentally a process that involves communities of people in particular time/space circumstances and relations. For many centuries, local communities have been responsible for determining their heritage values. The sites and buildings were constructed and conserved according to decisions concerning the allocation of communities' resources. Certainly, the local communities were being influenced by symbolic systems and values from other cultures. Since antiquity the communication system has been an important medium for cross-cultural fertilization.

Today, this situation has changed a lot. For example, normally the process of listing a building is the recognition that its values have surpassed the geographical limits of the local communities. In certain countries the inclusion of a building in the national list is a decision process that involves representatives of the national communities. There are many spatially different communities involved in the determination of heritage values and in the conservation of sites and buildings. Heritage values officially continue to depend on cultural experts and public officials. However, unofficially, they depend on financial supporters of conservation projects, tourists and tourism promoters, urban planners, real estate developers, and many other social groups.[7]

Built heritage is also an important form of connecting communities. Past, present and future communities can share values carried by buildings and sites, if the interpretation codes of these values are also transferred between the generations. Thus, to recognize a building as a social heritage is the creation of a vector of communication with future communities, and the intergenerational transference of built heritage is an important form of maintaining the cultural values in societies.

The relation of communities and the universal value of built heritage is different from that established with local communities. There is not a close relationship between the buildings and the communities that recognize their values. This process is mediated by a broad spectrum of symbolic codes and structures that are common to many groups of people in different places and times.

Universal value is a concept related to the local authenticity and the diversity of cultures: 'the modern concept of universal value is referred to the particular quality of a heritage resource. This is related to its being an authentic product of a particular culture or cultures. This issue is related to the idea of cultural diversity, that is, humanity has the capacity to be creative and innovative.'[8] But the recognition of the universal value is a process of creating relationships with other values that are not linked to a particular culture or cultures. Universal values, as a category, depend on social representations and symbolic systems shared by many communities in the world. These symbolic systems have to be built and reproduced in time, using some specific form of 'cultural medium' that can exist in many parts of the globe, and can last for many generations. This reproduction process is extremely complex, since it requires costly media, such as universities, schools, cultural ministries, films, television and radio programmes, books, journals, photos, art galleries, museums, and so on, which operate thorough the use of mass-media communication systems and infrastructures. It is almost impossible to think of a concept of universal values in a world not connected by transportation and communication systems. That is, a complex cultural system is in the background of the reproduction process of universal values, and the communication revolution has an enormous impact on its dynamics.

Cyberspace, cybersymbols and cybervalues

The communications revolution has created a new form of space: cyberspace. This is a realm of symbolic forms, whose only life is electronic, and which operates at close to the speed of light. All the elements of cyberspace are symbols and relations (interfaces and networks).[9] The material elements that support cyberspace (communications networks, computers, etc.) constitute the 'gates' of entry (interfaces) to this realm for people – permitting the interaction of the elements of cyberspace with the human senses.

Cyberspace has a profound impact on human life. Some important thinkers consider it to be 'the space of human culture' or knowledge, not because it is possible to insert all the forms of knowledge in it, but because its essence is the 'relation'. Cyberspace minimizes, and may even remove, the barriers to human relationships imposed by the time/space relations that prevail in the material world.

A virtual image of any cultural artefact may be generated and posted on the Internet. There are, however, some artefacts that exist only in cyberspace, such as, for example, virtual reporters, the fantastic architecture to be found in games and the 'Visible Man'.[10] The latter is a complete visual representation of the human body, from both the outside and the inside. There are no limits to observation; it is only necessary to define the angles, co-ordinates and type of movement for the observer to enter into a new reality of the body. The 'Visible Man' is also an 'operational symbol' that can simulate the bodily impact of many scientific experiments which could not be performed on real humans.[11] The set of virtual representations of the virtual-only artefacts, organized in relational space, constitutes cyberreality.[12]

Built heritage and cyberspace

The values of built heritage are important elements for those seeking knowledge and new life

experiences. Built heritage is already in cyberspace. The number of Internet sites directed at virtual heritage is growing fast, and many of these are experimental sites that are searching for new forms of presenting buildings and sites. To this end, they employ the full range of human sensation, comprehending sight, touch and hearing.[13]

Cyberspace changes the way people understand and interact with built heritage. In a similar way to the 'Visible Man', virtual heritage is different from a photograph, drawing, textual description or any other conventional form of representation. Fundamentally it is an 'object of knowledge', which can be manipulated in accordance with the objectives of many diverse intellectual projects. Furthermore, it is an 'operational object', open to any kind of experimentation and suitable for testing theories, meanings and sensations as well as establishing relationships between people and other things.[14] It is not subject to the restrictions of the real and material world; consequently, it can participate in simulation processes that (a) change the perspective one has of them and (b) change its nature by the addition and subtraction of its components.

One of the most interesting aspects of virtual heritage interface is the possibility of associating and establishing relations between buildings and sites in real time. Space and time lose their frictional characteristics, thus permitting monuments and sites to be put together[15] in the same time/space relation and be manipulated, in part or totally, to create a new space.[16] Virtual heritage is subject to symbolic operations. These operations have to be meaningful to those communities sharing the operating tools. Thus, virtual heritage is a medium for generating new sensations and knowledge related to real heritage. The virtual operation can most certainly contribute to deepening knowledge about the cultural heritage. This is due to the fact that any comparison between monuments or sites involves a methodological procedure necessary to improve the understanding of their values. Cyberspace allows for this and other kinds of operational procedures that may lead to new objects of knowledge.

Cybercommunities and cultural values

Cyberspace is a suitable medium for overcoming the cultural barriers that restrict the sharing and operation of heritage by different communities.

Built heritage has been a solid element in the representation of culture and its diversity, and virtual heritage is an effective medium for the dissemination of cultures and values. But virtual heritage is not only important because it uses a special medium, but also because it is a source of new symbolic systems. Cyberspace was the product of a special culture; however, its development is turning it into a medium for the creation of new forms of culture.

Virtual heritage is leading to the increase in the number of people and groups of people who are interested in cultural values. On the Internet, there are many communities centred on built heritage, and their members come from many parts of the world. Cyberspace enables their participation in specific cultural processes and, through the medium of virtual reality, they are also able to share values that are different from those of their own

cultures.[17] What ties virtual communities together is the possibility of actively participating in cultural processes and specifically creating symbols and values. The possibility of operating with symbolic systems attributes to cyberspace a new quality that distinguishes it from other media, such as books, radio or television. All past forms of mass media were very important in the cultural cross-fertilization process. They did, however, lack the main attribute of cyberspace, which is real-time interaction among people, in addition to the possibility of intervention in the symbolic systems that are represented in the medium.[18]

Without doubt, cybernetic cross-cultural fertilization and the operation of cybervalues are restricted to those local communities that are in fact connected to the Internet. The form of appropriation and construction of symbolic structures related to heritage sites also differs a lot from community to community. There is a complementary relationship between the symbolic structures of virtual space and real space, because the symbols and meanings of the two systems overlap. However, it is impossible to state that the overlapping corresponds to universal values. There are a lot of other questions that must be answered before the identification of common universal values in the two systems is possible. For example: Can universal values exist in the two systems at the same time? Are universal values connected only to places, and therefore to a specific space/time relation? Can these values continue to exist in the virtual built heritage or are they substituted by other values that we cannot yet classify? The answers to these questions are not easy because they require a larger cultural practice in the use of cyberspace. However, the phenomena that are behind these questions already start to change the perception of some categories of values, specially the economic value of built heritage.

The economic value of built heritage in cyberspace

Built heritage is important for economic processes. Today, some international businesses have adopted a strategy of associating the symbolic system of built heritage with their commodities (the material and immaterial objects of commerce and services). This association, when successful, adds a value to products that could not be created through the production process. The example of the tourist industry is perhaps the most immediately visible case. However, the same strategy is used in the fashion, craft and food industries, as well as by sophisticated service enterprises. These businesses are able to do this due to the fact that the economic value of any kind of human object is always a social relation. This is true for simple commodities as it is for unique human creations like built heritage. With the transformation of time/space relations, cyberspace and cybersymbols are bringing about profound changes in social relations and in the economic value of human artefacts.

Economic theory has been pressed to ask what the economic value of the non-reproducible goods of nature and human culture is, and how this can be calculated. The most accepted concept of the total economic value of a cultural artefact describes it as the sum of three other types of values:

Total economic value = use value + option value + existence value.

The option value is divided into three subcategories: use value for individuals, use value for future individuals (future generations) and use value for other individuals.

It is not the purpose of this article to discuss these categories, or their application to cultural objects, because reputable economists have already done this extensively.[19] What is being investigated is the new meaning of the total economic value of the heritage with the advent of virtual heritage. Certainly, since virtual heritage impacts on the meaning and the application of all the value categories that make up the total economic value, the total value is not the same.

When we analyse built heritage, we also have to consider the existence of its virtual representation; thus, for any building or site, the new total value can be expressed as:

Total economic value = total real value + total virtual value

The addition of the forms of value is a perfectly reasonable operation. Even though the two forms of value do enjoy some relative autonomy, they constitute two parts of a whole. Virtual heritage is a new dimension of real heritage that makes sense only with the existence of the other form. There is a genealogical process, by which virtual manifestation appears only after the real heritage. But were the real object to disappear, virtual representation may continue to exist.[20]

The use value has historically been associated with the material existence of built heritage and with the people who may visit the sites or monuments. Virtual heritage extends and enlarges use values because it creates a new form of visit and, more important, because it is an object of knowledge. Virtual heritage also enjoys some other properties not to be found in the real counterpart. The most striking of these is its infinite operational capability, as an object of knowledge that can last for ever, regardless of the kind of operation performed on it.[21]

The option value is greatly affected by cyberspace. The option value is associated with the potential for individuals to use or share the heritage values with other people and with future generations. This potential is present only when the heritage is known, otherwise it would be impossible to opt for not using it or for bequeathing such use to future generations. Cyberspace is enlarging the potential of individual choice, since individuals may exercise the option of using virtual heritage as a proxy of the real experience. For example, fragile sites may be protected from the hazards caused by visitors, through the use of virtual simulators that reproduce the environmental conditions and spatial perceptions of the sites.[22]

The existence value of the world's built heritage may change drastically with cyberspace. Quantitative and qualitative processes are transforming this type of value. The existence value depends on the knowledge that people have of a determined object and the number of people who have that knowledge. Thus, this value will increase in proportion to (a) the number of people aware of the values of the buildings and sites, and (b) the increase in the number of qualitative values that are socially recognized in the heritage.

In the case of well-known sites, such as, for example, the Pyramids in Egypt, the impact of virtual heritage on the existence value will be minimum. In contrast, however, sites that are not yet well known, such as Chan Chan (Peru) or Potosi (Bolivia), may experience a dramatic change in their existence values as calculated in monetary terms.

The qualitative determination of the existence value can be considerably altered by virtual heritage and cyberspace. The existence value of virtual representation of heritage provokes profound philosophical deliberation. For example, it is not clear whether it is ethically correct to destroy a virtual representation of built heritage. Is it a new artefact, having its own intrinsic value? Or is it possible to claim that it is a mere representation, empty of any value? Certainly, it is a cultural object that, though distinct from the real heritage, is necessarily attached to it. At the very least, virtual representation is the best manner of guaranteeing a record of the real heritage should it be destroyed by some disaster. Virtual heritage comprises elements that represent a new dimension of the same artefact. They can be the depositories for experiences related to the buildings and sites, subject to unlimited expansion and open to all kinds of reasoning and conclusions. It is a space of knowledge, complementing the space of material information, the domain of the real heritage.

Finally, the practical determination of the economic value (in monetary terms) of built heritage is a difficult and costly process. The classical analysis of, for example, the willingness to pay for the conservation of the sites, or the cost of visiting the monuments, requires time-consuming surveys in different regions of the planet. Cyberspace permits a reduction of the time involved in these procedures, the expansion of the samples used for the surveys and the formulation of more precise questions (as well as the provision of answers), with the use of virtual heritage and simulators (in the future).

Conclusion

Virtual built heritage cannot be considered a simple representation of real buildings and sites. It is a new element of knowledge that will profoundly change our conception of built heritage and its cultural values. This impact will perhaps be present in the economic value that communities attribute to built heritage. Over the last decades, economic theory has made great advances in understanding the importance of environmental and cultural goods for economic processes. The emergence of cyberspace poses a new challenge to economic theory. Virtual heritage is an object of knowledge; thus it has the right to exist *per se* and has value independent of the material existence of the heritage. Virtual heritage brings to the economic process new flows of goods (virtual goods) and services and is a source of utility to large communities around the world.

The two forms of built heritage – the real and the virtual – are not exactly different 'faces' of the same thing. The independence of the two forms creates a dynamic in the process of value generation which will change our approach to our cultural heritage.

NOTES

1. Artefacts are simple artificial elements, that is, men create them. Herbert Simon defined an artefact 'as a meeting point – an "interface" in today's terms – between an "inner" environment, the substance and organization of the artefact itself, and an outer environment, the surroundings in which it operates' – H. A. Simon, *The Sciences of the Artificial*, p. 7, Cambridge, Mass., MIT Press, 1969.

2. S. M. Zancheti and J. Jokilehto, 'Values and Urban Conservation Planning: Some Reflections on Principles and Definitions', *Journal of Architectural Conservation*, Vol. 1, March 1997, pp. 37–51.

3. P. Lévy, 'A Internet e a crise do sentido', in N. M. C. Pellanda and E. C. Pellanda (eds.), *Ciberespaço: um hipertexto com Pierre Lévy*, pp. 21–35, Porto Alegre, Artes e Ofícios, 2000.

4. In this text, the concept of community is that used by Ester Dyson. See: *E. Dyson, Release 2.0: A Design for Living in the Digital Age*, p. 33, New York, Broadway Books, 1997.

5. To be more precise, the adjustment of human relations to electrical time, according to Marshall McLuhan's concept.

6. This process has been very well described and analysed by distinguished authors and does not need to be detailed here.

7. The traditional group of intellectuals and public officials which, for example, has been involved in organizing the World Heritage List, is losing its importance, relatively, to other economic communities. The pressure on ICOMOS to analyse the large number of requests to list world heritage sites is today quite revealing.

8. This definition comes from a comment by Jukka Jokilehto to a previous version of this article.

9. Relations between: man–machine; machine–machine.

10. See: *http://www.nlm.nih.gov/research/visible/*.

11. C. Waldby, *The Visible Human Project: Informatic Bodies and Posthuman Medicine*, Routledge; L. G. Santos, *O ser digital e a virada da cibernética*, Folha de São Paulo, Caderno Mais!, 25 May 2001.

12. In this text, cyberreality is a concept comprehending the elements that exist only in cyberspace. Virtual reality is the concept used to express the elements of our world that have a representation in cyberspace.

13. On the Internet, the number of sites specializing in virtual built heritage is growing fast. The site *http://www.virtualheritage.net/* is a compendium of some of the most interesting experiments with virtual heritage and is a source of information about new initiatives in this field.

14. The properties of virtual heritage listed here can only be experienced if there are interfaces linking cyberspace to our sensations. The interface is the crucial element for the full development of built heritage as a new object of knowledge. For a very good interpretation of the social impacts that interfaces are causing in our culture, see S. Johnson, *Interface and Culture: How New Technology Transforms the Way we Create and Communicate*, New York, Harper Hedge, 1997.

15. In the newsagents of Italy, particularly in tourist spots, it is common to find, a 'photo' or a 'map' of Italy composed of photos of other monuments and heritage sites. At first glance, the image is similar to a satellite photo, but on closer scrutiny, we realize that it is composed of photos of famous monuments. It is a rather kitsch image. However, it is also an attempt to establish a general framework of relations between the sites and monuments. Cyberspace allows for this type of construction, and the result is a completely new element.

16. Johnson, op. cit.

17. The creation of opportunities to 'visit' the monuments and sites of the world heritage has constituted the strongest motivation for members of the virtual heritage community to create virtual representations of these elements.

18. Certainly there is no substitute for the real experience of visiting heritage sites and monuments. Visiting such sites is an aspiration of any member of virtual heritage communities. However, for the majority, time and cost restrictions are prohibitive.

19. There is a vast bibliography on the subject of the economic value of cultural and natural artefacts. This work referred mainly to Pearce's contribution. See D. Pearce, A Markandya and E. Barbier, *Blueprint for a Green Economy*, Chapter 2, London, Earthscan, 1989.

20. Virtual heritage has been used to 'create' representations of vanished or ruined built heritage. It is a powerful instrument for carrying out stylistic restoration, such as that done in the nineteenth century by Viollet-le-Duc and others. A good example of these new creations of ancient built heritage is the site of the 2004 Athens Olympic Games, aimed at recreating ancient Olympia. See *http://www.phm.gov.au/ancient_greek_olympics/*.

21. The new use value of virtual heritage creates economic opportunities

for the local communities that own or conserve the original buildings and sites. They can acquire certain rights to the conservation of the material authenticity of the artefacts and the universal values for the use of other communities. This economic gain is similar to that resulting from the maintenance of rain forests by the indigenous peoples.

22. The use of virtual representations and simulators can be very important in the case of buried archaeological sites. Cyberspace is a suitable space for the construction of operational representations of these sites without the need to conduct an actual dig or, at least, permitting the postponement of their exposure until a future in which the loss of information would be minimal.

THE INFORMATION SOCIETY

PART OF SERVICE SECTOR IN THE GDP (%)

	1998	Evolution from 1980 to 1998
Brazil	more than 60	+40
Canada	more than 60	—
France	more than 60	—
Latvia	more than 60	+78
Bangladesh	50–59	+31
Georgia	50–59	+45
Malawi	40–49	+35
Mongolia	40–49	–30
Saudi Arabia	40–49	+150
China	30–39	+57
Dem. Rep. of Congo	20–29	–37
Guinea-Bissau	20–29	–30

Source: World Bank/OIT

1:5

THE WORLDWIDE ICT MARKET BY REGION

WORLDWIDE ICT MARKET	2 442 BILLION EUROS (%)
USA	34
Europe	29
Japan	12
Rest of the world	25

Source: EITO

1:7

THE WORLDWIDE ICT MARKET: ANNUAL GROWTH BY REGION

2001 AND 2002/2003 PREVISIONS (%)

	2001	2002	2003
World	4.4	6.6	9.8
Western Europe	5.1	5.4	7.8
USA	0.5	5.1	9.4
Japan	5.3	7.6	7.3
Rest of the world	8.7	9.3	13.8

Source: EITO

1:6

PROPORTION OF GDP SPENT ON PUBLIC ADMINISTRATION ICT COMPARED WITH EU AVERAGE

PERCENTAGE OF GDP SPENT ON PUBLIC ADMINISTRATION ICT COMPARED WITH EU AVERAGE IN 2000

Sweden	+0.40 to +0.50
Denmark	+0.30 to 0.40
Finland	+0.20
United Kingdom	+0.10
France	0 to +0.10
Spain	0 to 0.10
Luxembourg	–0.10 to –0.20
Ireland	–0.20
Portugal	–0.20 to –0.30

Source: EITO

1:8

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