

THE VIRTUAL MUSEUM

1. WHAT IS A VIRTUAL MUSEUM?

What is a virtual museum? After about ten years of application of digital technologies to cultural heritage the question may appear to be trivial, but it is not so. This fact immediately becomes apparent when we observe the various entities that are called by this name and realize that we are dealing with a wide variety of very different things, often without any theory or concept in common. In fact, we need only to observe the various products in some way related to museums and presented on the web in order to realize that this is a catch-all label.

Eight years ago (which in the technology world corresponds to an entire era) I edited a special issue of the journal «Sistemi intelligenti» (AA.VV. 1998) that was entirely dedicated to virtual museums. The contributors (Richard Beacham, Maurizio Forte, Alfredo Ronchi and others, besides this author) formulated a series of interpretations and, for that time, expectations, all of which, though largely diversified, agreed on what appeared to be the main asset and promise of this application: the ability, more than any other means, to make understandable the nature and the value of the objects which form our cultural heritage; that is, the capacity to make them communicate to everyone, which is the essential condition for the transmission of culture. Alas, it is interesting (but sad) to realize that it is exactly this expectation which has, at least up to now, not been met.

This is not the place in which to examine why this happened (even though, as I mentioned above, it might be instructive). It is however an appropriate place to reaffirm the same opinion previously expressed (which I believe is still shared also by the other pioneer-authors) and to attempt a more precise and explicit definition of it (which is easier now after the experience accumulated in the last eight years) that will help us to achieve its goal, especially by following the most direct method used for effectively and convincingly demonstrating the potential of new technologies: using them paradigmatically in concrete realizations.

2. WHAT A VIRTUAL MUSEUM IS NOT

To this purpose, we shall start by employing a useful educational technique, since this also proceeds by concrete examples: we will start by stating what a virtual museum *is not*.

A. *The virtual museum is not the real museum transposed to the web* (or to any electronic form): it is not the real museum if the transposition is partial (as we see in many museum sites) – and it would not be even if the real museum were entirely reproduced. This reproduction, in fact, does not have and would not have any value other than the trivial one of making it possible to “see” the works in the museum without having to go there (which in an era of mass travelling and tourism tends to become of increasingly marginal interest). On the other hand, the cost of such a museum would be extremely high – that indicated by the quotation marks around the word “see” above; for whatever technology we use is still very far from making the reproduction come close to conditions which are satisfactory enough, from a perceptual point of view, to make experiencing the object the same or even similar to the real experience.

Seeing a painting or an object on the screen of a computer, even a very large one with all the definition that modern technology is able to offer, still does not create the same perceptual impression that one has viewing the object on the site, and since we are dealing with objects in which details and specific features are usually very important, this is hardly a minor drawback. Moreover, the museum is perceived also and not secondarily, with the *body* and not just the eyes (in an era of technological reproduction we tend to underestimate this factor); we move through the rooms, around and in front of the objects; we have a sense of position in space, which is crucial for the perception of volume, of size and of texture. This makes a fundamental contribution to the appreciation of the viewer’s experience and is vastly different from sitting in front of a screen observing images that are scrolling.

When interpreted in this manner, therefore, a virtual museum is not very different from a traditional printed catalogue in which all of the works are carefully reproduced using state of the art technology: the experience of a real visit, in fact, is just as remote.

B. *The virtual museum is not an archive of, database of, or electronic complement to the real museum*, even though there is in this case, unlike the preceding one, an “intrinsic” value added (or rather, there might be if things are done in a proper way and that is far from obvious): the complete cataloguing of the works, the collection of all the provenance and historical data, of the original sources, of critical literature and complementary literature (other similar works, other works by the same author/of the same period/place, etc. followed by the pertinent reference data), perhaps in conjunction with an efficient search engine and a large amount of visual materials (which are much more difficult to be readily available than text is).

The problem in this case is not the value added, but rather the target: to whom and/or for what purpose is this useful? Certainly not for the ordinary

visitor, who has completely different needs. The ordinary visitor will not start searching through the enormous amount of material related to the object that he has just seen, because the sight of it has stimulated his curiosity, as many of the models which form the basis for this type of work naively presume. In order to do this, he would have to have a satisfactory understanding of the object itself, which is a precondition to any desire of enriching and improving ones knowledge of it, as well as to knowing how to do it.

If this understanding does not already exist, it is not clear what the visitor should look for, why he should do it, and not even where he should look: the relevant criteria for conducting even a minimal, meaningful search are totally lacking. At the very most such a visitor can browse randomly and perhaps stumble upon some unusual feature which will probably be of interest only as an “odddity”.

The ordinary visitor is usual disoriented: if we place him in the midst of several hundred choices having labels which presume some prior knowledge of the object, we only increase his sense of disorientation. Moreover, when faced with these repertories, the main factor is lacking: motivation.

The ordinary visitor, especially the type of person who visits a museum nowadays, must be taken by the hand, so to speak, and guided along a safe path, where he does not have to face the problem of making choices among things of which he has no knowledge and is therefore unable to make a selection, and, on the contrary, where the information that is truly essential to the understanding of the object he is looking at is communicated in a simple and comprehensible manner, that should, if possible, also intrigue and thus stimulate motivation.

The user to whom this kind of virtual museum/electronic complement is directed is a person who already possesses a good knowledge, and the more he knows the better it is, both from the point of view of having a real need and enjoyment of the material offered, and from that of knowing how to use it effectively.

C. The virtual museum, finally, is not what is missing from the real museum: the completion of the collection. Something like “The complete works of...”. In this case too, we are not dealing with a lack of value added: it may make sense to make the works that are scattered around in various collections available in order to make visual comparisons (bearing in mind of course the perceptual limitations always involved in this media), but this has very little to do with the museum; not only with a concrete museum, but with the very concept of a museum.

A museum is characterized by the fact that it has a particular collection, and therefore a limitation with respect to the works it contains. This fact constitutes its history and its identity and determines its specificity (and

often its “role”) in relation to other museums: it determines its being “that particular museum”. Extensive modification of the composition of the collection, if consistently pursued, means not changing *the* museum, as occurs in reality where the changes in the collection are always very limited, but *changing museum*, in other words, creating a new museum. If, on the other hand, the availability of works were to be unlimited – as occurs with the technological transformation, since the reproduction of any work can be put on display – then the very concept of a collection disappears and with it, the concept of a museum. Why should the works of one artist be displayed rather than another? Why one period rather than another?

And actually, what we are talking about (or rather, its physical approximation in the real world) is called by another name, which is “show” in the sense of “exhibition”. A show is an organized display which is formed and developed monographically: it should be noted however that the “show” exists *in opposition* to the museum. It is a re-assembled cross-section of the collections that characterize the museums. For this reason, it also is temporary, since, if it were permanent, it would make both the collections and the museums disappear.

Naturally, we have nothing against these organized displays and we could as well call them “virtual shows” (even with all the limitations involved, some outstanding examples do exist), however we are simply not dealing with this subject here because it does not answer the original question we asked: “what is a virtual museum?” A virtual show is not a virtual museum, just as a show is not a museum.

3. POSITIVE FEATURES

In the absence of a concrete example that exists and can be used as an illustration, this “negative” summary makes it possible for us to better identify the positive conditions which would make the notion of “virtual museum” pertinent and interesting. Beginning from the last thing we said, the notion makes sense only in relation to a real museum, with the “strong” definition of its cultural identity based on the specific collections it owns and displays. This identity must not be denied by the virtual object, it must be assumed by it.

In the second place, we have also seen that the virtual museum cannot be the copy of the real museum: it would be a poor imitation from a physical and perceptual point of view and would not exploit any of the specific characteristics that the technological transformation offers (except the trivial one of remote viewing). It cannot even be an “enlarged” copy of the museum (inventory, database, accessory materials). In this case the specific nature of the technology would be (or could be) better exploited – one could do things that

cannot be done, or can only be done with great difficulty in physical reality – but to whose advantage? Certainly not to that of the ordinary visitor.

From this, the fact emerges that we need, besides strong relationship with the specific cultural identity of the physical museum, something that will exploit its technological nature at its best (rather than at its worst, as occurs with the simple “copies” of the real objects) and that does this, not for technicians, experts, researchers or other types of scholars, and not with the prime intent of helping/increasing the work/enjoyment of these people, but of helping the ordinary visitor, the person who does not “already know”, the current or potential greater public of the museums.

4. THE ROLE OF VISUAL TECHNOLOGIES

As it often happens when we manage to pick the right pathway to follow, these goals become synergetic. Among the latest developments of the current technologies, and those in which the frontiers are continually expanding, some of the ones with the most potential are the innumerable ways of dealing with the manipulation of images, especially synthetic images, both alone and in combination with real ones, achieving extraordinary effects of synthesis, both real and fantastic (synthetic cinema and animation). Representative of these achievements are, for example, the level reached by special effects in motion pictures, which are now almost entirely produced using these technologies. These techniques enable us to build and manipulate synthetic visual worlds (“virtual” worlds) with extraordinary wealth of detail and variety, and incredible flexibility. We can now create *visual narratives* of a quality and on a scale which was inconceivable (or impossibly expensive) until recently, and which are exciting, moving and dramatic.

The visual narrative, however, is the best means to effectively communicate about objects in a museum to the ordinary visitor. It is the best, not only because, as we all know, visual communication is much more powerful than textual communication, not only because it is more effective from an educational point of view (simpler/easier to understand), it is also more motivating since it is better at attracting and holding the viewer’s attention (watching a film is very different from listening to a lecture). The visual narrative is all of these things, and this alone would induce us, if we could, to use this form of communication rather than a linguistic or written one. However, in the case of artistic objects, this means is also “intrinsically” more suitable, and, in fact, one can say that is the *only* means that is really appropriate.

Thirty years ago, a great art historian, who also happened to be the founder of Italian museology, Carlo Ludovico Ragghianti, wrote: «...not adequately exploited is the possibility of making clarifications of the visual language [of art] using visual language, which could save, advantageously, by

virtue of evidence, the verbal comment, with its frequent unrewarded ambitions, and its equally frequent disjunctions from the works of art» (RAGGHIANI 1974, 189). The objects in question are fundamentally visual objects, and any verbal treatment of them implies a translation of their most essential intrinsic characteristics, which are of a visual and perceptual nature, into a textual form. It is only reasonable to think that, beyond any specific merit, this treatment will turn out to be inadequate, at least to the same degree to which the verbal description is inadequate to reproduce the visual perception of the object (Ragghianti's "disjunctions"). The homogeneity of the means – visual with visual – will instead facilitate the "clarifications" "by virtue of evidence", that is, without having to go through any verbal reformulation.

It is interesting to note that Ragghianti, who was totally convinced of the truth of this statement, took positive action towards the creation of these visual narratives to illustrate works of art, using the only means that existed in his era: moving pictures. The extremely low flexibility of this means coupled to its high costs during Ragghianti's era greatly limited this concrete effort (see his so-called *critofilm d'arte*), but gave an idea of the extraordinary potential of this means if it were to become available.

The technological advancements made during the last thirty years have done (and continue to do) just this; making it possible for it to deal with everything and making it accessible to everybody.

However, if, on the one hand, we have now obtained total accessibility, on the other, the price of this would seem to be a certain incapacity to fully exploit what became available, not so much from a technical point of view as from a conceptual one. The problem is that visual language is a form of expression which is very different from verbal language (as those who know how to use it well know), and while all of us are educated and trained to use verbal means from kindergarten through college, very few of us ever receive any training in the use of visual language, and even less than most, art historians, archaeologists, curators that are in charge of cultural heritage. This creates a gap in professional competence which must be filled either by an *ad hoc* training program or by systematic and intense collaboration with experts in visual communication; more realistically, both.

If we are successful in doing this, we will be able to tap the real value added by the visual-interactive technologies for artistic and cultural heritage. This is the task which defines the meaning of "virtual" in the expression "virtual museum". As far as the word "museum" is concerned in this expression, it should be interpreted in the "strong" meaning that it has its concrete, physical equivalent: it is the specific nature of the collection(s) of the museum historically and physically determined which constitutes its peculiar cultural identity. Consequently, the virtual museum will be an attempt to use the great power of visual media created by the development of visual-interactive

technologies to enable and enhance the appreciation and understanding of the specific cultural patrimony of the real museum, by the greater public of (actual or potential) visitors. If we wish to summarize this concept with an aim to definition, we could say that the *virtual museum is the communicative projection of the real museum*.

5. THE STRUCTURE OF THE VIRTUAL MUSEUM

The means for creating this projection, however, represent a problem that is anything but simple, and not just on account of technical reasons or the inability to use the particular means of communication, as has just been mentioned. The main point is that this type of communication enters into conflict with the display structure of the museum, at least with the traditional one. The underlying reason for this is quite simple (although its genesis and inter-relations are exceedingly complex: ANTINUCCI 2006): the purpose of museum display is traditionally oriented towards the analysis and comparison of the art works, towards their critical evaluation and the understanding of the processes of their genesis, having in mind a public that has already a good background in the field. It is not directed to the understanding of these works through the reconstruction of their original communicative context and effect.

This latter would require a display arrangement that is radically different from the analytical presentation; a simple example (but one with enormous consequences) would be the number of works exhibited. For comparative and analytical purposes it is a good idea to display all of the works belonging to a certain series (a typical example of this would be the familiar display cases with interminable sets of similar pots or cinerary urns in archaeological museums, or the room with all the painting of a geographically defined local school in an art history museum) but such series simply cannot hold the attention of the ordinary visitor (who, after the third or fourth example, will loose interest and move on to something else) and is certainly not the best way to explain what is the significance of one of its member (“what is an Attic vase?”). However, it is difficult to intervene so drastically on the historical *corpus* of objects in the museum (by removing, for example, the series and leaving just exemplar on display) and eliminate or move elsewhere its analytical function, which, in any case, was often at the origin of its collection.

The virtual museum, according to the definition which we have just given, when created in close relation to the real museum, makes it possible implement such an operation on a large scale and without hesitation. Not only does it allow us to make radical transformations, it encourages us to do so, since, as we have seen, it would add very little if the virtual museum were only a simple copy of the real museum. If, to this possibility of radical

re-organization related to the task of communication, we also add the specific technological feature that represents the strong point of the virtual construction – which is, as mentioned, the possibility of exploiting powerful and effective visual means – we now know both the aim of this operation and the methodology to conduct it. The strong point of the virtual museum (and a point which is totally synergetic with the real museum) is what it can do *for* the physical museum that cannot be done *in* the physical museum (or at least could only be done with great difficulty and/or hesitation).

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REFERENCES

- AA.VV. 1998, *Musei virtuali*, «Sistemi intelligenti», 10, 2.
ANTINUCCI F. 2006, *Comunicare nel museo*, Roma-Bari, Laterza.
RAGGHIANI C.L. 1974, *Arte, fare e vedere: dall'arte al museo*, Firenze, Vallecchi.

ABSTRACT

The Author illustrates the positive and negative features of the virtual museum, and the role of visual and new interactive technologies in the cognitive processes. He then defines the concept of the virtual museum as the communicative projection of the real museum. According to this definition, the virtual museum is not a simple copy of the real museum; in fact, the radical re-organization related to the task of communication, also from the point of view of the display structure of the virtual museum, creates the possibility of exploiting powerful and effective visual means, which is the strong point of virtual construction.