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Research Article

Italian perspective on the planned preventive conservation of architectural heritage

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Abstract This paper tells us a complex story on the historic evolution of preventive conservation of architectural heritage in Italy. Firstly, it introduces Cesare Brandi's Theory of Restoration, pointing out the peculiar sense of the word Restoration in Brandi's system other than the common sense in the international discourse, the limits of Brandi's theory to architectural conservation and his prophecy on preventive restoration. Then it talks about the different framework and practices of preventive conservation in the field of built heritage compared to the museum sector, the milestone of Giovanni Urbani's pilot project on programmed conservation and the leading role of the Risk Map of Cultural Heritage. Finally, based on the discussions of the durable change in the architectural conservation field after the Venice Charter, including the teaching in Milan School, the debate and re-definition of architectural conservation and the advance definitions of conservation, prevention, maintenance and restoration in the 2004 National Code of Cultural Heritage and Landscape, it gives us an agenda for future trends of planned conservation with aims to conserve the material authenticity and promote the co-evolutional strategy.

1. Introduction

The conservation of architectural heritage is no longer a modern concept, according to Eugene Emmanuel Viollet-le-Duc during the mid-19th century. In almost 200 years, theory and techniques underwent an important evolution, with certain peculiarities in different countries but a focus everywhere on major interventions that extend beyond

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maintenance and require decisions based on the deep understanding of values. Debates abound on the legitimacy of restoration and meaning of authenticity. International and national charters offer wise guidance but are often based on highly comprehensive statements conciliating different positions. Besides these issues, another question involves the efficacy of processes, which seem focused on accomplishing major works within a short span of time, often without prevention and aftercare. Different procedures are implemented in various contexts to provide continuous care and prevent risks. For example, England has a long tradition of having churches inspected by a technician every five years (Fielden, 2005). For museums, preventive conservation was developed by an international movement, setting accepted guidelines with a strong scientific basis (Ashley-Smith, 1999; Staniforth, 2013). The practice of regular inspections is a well-defined model in the Netherlands (Heinemann and Naldini, 2017), which was further developed in Belgium (Vandesande, 2017; Van Roy et al., 2017). Moreover, several attempts have been made to replicate this model in other countries.

A shift toward preventive actions was proposed several years ago in Italy. International development of preventive conservation is considered through a peculiar perspective in Italy. This finding is not surprising, as Italy undoubtedly plays a special role, in the past and present, in the development of theories and practices on historic preservation. The implementation of scientific techniques as well as methods for compensating loss has solid roots in Italy. However, this history is complex and problematic and thus should be discussed to better clarify certain conceptual knots, especially because the protection of heritage should encompass objects and environments. The same concepts should be applied to artworks and buildings or historic urban landscapes. Given that this study focuses on the preventive and planned conservation of buildings or built environments, the issue of oneness of concepts and methods will also be discussed. Analyzing the genesis and implementation of preventive conservation theories in the Italian context, considering different steps, and highlighting potential misunderstandings are necessary.

2. Cesare Brandi

A mandatory reference for theory of conservation (preservation, restoration …) is the reflections of Cesare Brandi (1906—1988), dating from after World War II and published eventually in 1963 and translated into more than 20 languages. Brandi's theory introduced a pivot in the recognition of objects as works of art. Specifically, the complex method of restoration is devoted only to works of art, with the aim of passing them down to future generations in their physical consistency, balancing respect for their historical and artistic natures.

Brandi's vision is reflected in the Venice Charter. Recently, the influence of Brandi beyond Italian borders has increased, with the main message focusing on the treatment of loss through sensitive compensation rather than bare remaking.

Unfortunately, translating Italian texts on historic preservation is difficult, starting with the different meanings of major key words, which have the same Latin roots but have come to mean different things in different national arenas. When Brandi uses "restauro," he does not mean "restoration," or "conservation" in the current sense of the English words. In this study, as in most official translations of his theoretical book by Cynthia Rockwell, the word "restoration" is used in the peculiar sense employed in Brandi's system rather than in the common sense in international discourse. In Brandi's vision, restoration does not involve reviving the past and recovering original appearances. Rather, it is a complex intellectual practice that, as with the recognition of artworks, has a link similar to that between history and philosophy. According to Brandi, restoration is the "methodological moment in which the work of art is recognized, in its physical being, and in its dual aesthetic and historical nature, in view of its transmission to the future." Therefore, it does not necessarily involve returning an artifact to its physical condition at a certain stage of its morphological development. This recognition occurs as a recreation of a work of art in human experience. However, conservation risks restricted to physical intervention in the actual fabric of artifacts and reductions would lose most of the cultural background of Brandi's methods. In 1939, Brandi was appointed to head the National Central Institute for Restoration (Istituto Centrale per il Restauro [ICR]). He invested a large amount of available funds in technical equipment for scientific investigation, though according to his vision, the art historian, as a figure capable of addressing issues in art, should dominate in any conservation work.

An important topic in the present study is Brandi's inclusion of the concept of "preventive restoration" in his theoretical framework. Although a chapter on this topic was published by Sarah Staniforth in her anthology of readings on preventive conservation (Staniforth, 2013), among the historical foundations of the concept, this point was not central in the reception of Brandi's thought.

Furthermore, Brandi's "restauro preventivo" cannot be identified simply as the subsequent concept called "preventive conservation." Italian debates on the relationships, oppositions, or overlaps in ideas or restoration and conservation are highly articulate and cannot be reduced to saying that "the Italian notion of 'restauro' encompasses restoration, 'direct' or 'remedial' conservation and preventive conservation. Brandi in fact devotes a whole chapter of the *Teoria del restauro* to discuss what he calls 'restauro preventivo' (preventive conservation)" (Muñoz Viñas, 2015).

Brandi's preventive restoration describes the beginning of the recognition process and encompasses the investigation and assessment of conditions for physical conservation. Moreover, it includes the authenticity of the artifact being recognized and enjoyment conditions, which are considered urgent and at the same level as physical conservation. In fact, no step in Brandi's method is simple. Any action should consider the dual aesthetic and historical nature of artworks, looking for the best.

As an art historian, Brandi dealt with all the arts, which in his vision include architecture, as "architecture, if it is true architecture, is also a work of art." This idea is an open problem, and numerous authors disagree with Brandi's

theory, pointing out the weakness of his contribution to issues in architectural conservation.

Considering the specific language of architecture as art, Brandi addressed not only the practical problem of usability but also the role of users and life in inhabiting and shaping spaces. In Brandi's vision, architecture produces forms and spaces to be understood as interiors and exteriors rather than experienced by living in and inhabiting them. Brandi recognized the richness of architecture from the perspective of art, which ran the risk of becoming a very narrow perspective.

The point is complicated, because in extending the sophisticated methods of restoration to architecture, Brandi's vision encouraged the use of scientific investigation, diagnostics, and complex and sensitive decision making, paying special attention to avoid the risk of making fakes (Petraroia, 2006; Matero, 2007). However, recognition of the artistic nature of buildings as a precondition for sensitive conservation can lead to an absurd lack of rules in the management of urban landscapes. For example, Brandi expressed that the houses in Piazza Navona, Rome, can be destroyed and rebuilt as copies but would not be considered as fake products, as they are not artworks. According to Brandi, these historic buildings are not monuments but only part of the historic urban landscape surrounding true monuments. With the development and evolution of conservation theories, this position became increasingly awkward over time. Thus, the related passage was omitted from the "complete" English translation by Rockwell, which was edited by Giuseppe Basile (Brandi, 2005).

In the field of architectural preservation, Brandi's approach has an intrinsic weakness, making him unable to foresee certain further developments. Specifically, his concept of monuments and architecture as works of art would not hold in the presence of increasing demand for the protection of built stock recognized as heritage by communities, such as industrial heritage, historic centers, urban settlements, military installations, and so on.

To provide a couple of examples, the recognition of values can be very diverse when dealing with industrial heritage, such as in the case of the Saint Etienne manufacturers (Zanetti, 2011) or buildings, such as the new hospital of Milan, which was designed in the 1920s. This last case was crucial in the development of hospital design in the country owing to the contribution of Ronzani (who was a hygienist doctor) and Marcovigi (who was a civil engineer). A famous architect designed only the decoration of the main façade. The decision to limit conservation to this last part, as the only component that could be considered as a work of art, would definitely cause misunderstandings on which feature of a building is the most important. In other words, multiple approaches to historical architecture can exist, some of which could be based on issues that differ from those traditionally based on aesthetic features, as attention is paid to buildings designed for practical purposes and those representing significant developments in technical and scientific culture. Openness in this direction is necessary to meet the evolution of public debate.

Another very Italian issue involves the restoration of churches, where signs left by the presence of communities are quite often not important from aesthetic and historic perspectives but extremely meaningful from an anthropological point of view. In fact, this shift to an anthropological understanding of heritage became increasingly important in Italy after 1964. Indeed, this understanding is a key perspective to consider to manage the numerous new demands that emerged in the last decades. In other words, Brandi's approach is extremely expert centered and must be forced to keep pace with developing user- or community-centered approaches, which are the issues raised by authors such as Laurajane Smith (2006). However, this theme is highly relevant in the development of the concept of preventive conservation. Notably, involvement is a central topic in international debate communities (Van Balen and Vandesande, 2015).

Nonetheless, Brandi's intuition of "preventive restoration" framed in his extremely sensitive and complex vision of heritage, remains the first and most important reference in the renewal of conservation processes and practices.

3. Preventive conservation and architecture

In general, when referring to "preventive conservation" without other specifications, one alludes to the museum sector from which the field of architectural conservation can produce a series of methodological and practical lessons while considering different problems generated by the conservation of buildings rather than artworks and collections. Studies conducted for more than 20 years established an important background of knowledge, an international scientific community, and a framework of normative references on preventive conservation developed in the context of museums and collections (e.g., Ashley-Smith, 1999).

Following Brandi's attitude, many scholars and practitioners faced the problem of preventive conservation from theoretical and practical perspectives for objects, interiors, and buildings. In reality, the complexity of architecture distinguishes it, even in the conception of heritage conservation as a large-scale environmental problem. Architecture cannot be reduced to the dimensions of artworks, as understanding and enjoyment are obtained through its use, and practical problems of its conservation differ considerably from those of objects. Treating architecture using the same criteria employed for artworks entails prioritizing visual issues over performance-related issues. Paradoxically, this is a problem only when dealing with architecture hosting artworks, which require proper conditions for their conservation.

According to Frank G. Matero (2007), the issue can be reduced to the aesthetic enjoyment of buildings and sites. He quoted Panofsky, who, in his fundamental essay "The History of Art as a Humanistic Discipline," summed up the problem of the dichotomy as "[A] work of art is not always created exclusively for the purpose of being enjoyed or experienced aesthetically … But it does demand to be experienced aesthetically." In fact, most buildings are created to be something other than a work of art, and aesthetic experience is merely part of the overall understanding and enjoyment. Architecture produces places for living and structures for protecting objects and people, enabling activities, and so on. The investigation of architecture focuses on its history, and numerous disciplines can

enrich understanding on historic buildings. Moreover, beyond practical issues, in the experience of a place, aesthetic experience is a component that is generally considered with education, entertainment, and escapism (Pine and Gilmore, 2011). Furthermore, many places are protected owing to their value unrelated to art or beauty.

If aesthetic experience is limited to selected "high-quality" buildings, then the "selection" issue arises, which generates the problem of deciding what is worth keeping and what should be demolished to improve the significance of a monument. This problem lacks a solution, as over time, the boundaries of protected heritage were widened to include categories of built heritage not previously considered. From rural settlements to industrial heritage, and even inside the same building, the meaning of different phases developed to include nearly everything as an interesting sign. Therefore, selection is no longer based on aesthetic or historical arguments but on reasons on another level, that is, ethics in the management of resources (Bellini, 2008).

Nonetheless, the discourse on historic preservation and architectural conservation developed playing on the double nature of artworks and buildings. In Italy, scholarly theory, standards, and protection laws occasionally work on the criterion of heritage and sometimes on criteria related to building standards.

After the implementation of the Venice Charter in 1964, developments in Italy became extremely dynamic. However, most debates were conducted at domestic levels, whereas connections in the international arena officially followed codified approaches, that is, a wise central path between conservation and restoration based on historical and aesthetic values. This central line maintains the theoretical role of aesthetic and historic judgement as the foundation for decision making but expands the focus to material authenticity and acknowledges that the more a building is studied, the more reasons emerge to keep everything, without any removal.

In this context, two main contributions to the foundation of planned conservation, as it is currently understood in Italy, are identified: (1) the work of Giovanni Urbani and (2) referring to architectural conservation as a special field that should be treated differently from artworks and collections, and theoretical developments disregarding value-based selection, thereby promoting a broad understanding of architecture and prioritizing physical conservation.

4. Giovanni Urbani

Concerns about pollution and environmental decay emerged at the beginning of the 1970s. It was a time of discovery on the limits of natural resources, the hypothesis of "zero growth," and so on (Meadows et al., 1972).

The first ecological documents focused on the protection of the equilibrium of the planet based on the concept of "states of equilibrium" and "alteration processes" for prevention or reduction. The Second Law of Thermodynamics became a common theoretical premise for prioritizing conservation, thereby giving it a scientific flavor.

In this atmosphere of environmental concerns, physics professor Marcello Paribeni collaborated with Giovanni Urbani to develop possible methods for measuring the "state of decay" of art objects using classical thermodynamics. Urbani, as the director of the ICR, steered the activity of the institute toward the concrete and systematic application of Brandi's idea of "preventive restoration," investing conspicuous energy into developing the premise of a policy for "planned maintenance." "That turnover of traditional restoration, which up today has been only theoretically postulated (Brandi) as 'preventive restoration,' must now take the concreteness of a technical action," Urbani wrote, adding that, "to this technical action, we give the name of planned conservation."

Urbani was a very cultivated individual, with numerous interesting relationships with influential intellectuals, writers, and artists. He was educated at the school for restorers in the ICR, receiving a degree in art history in 1947 under the supervision of Lionello Venturi. He initially enrolled in the ICR as a restorer and was appointed as director in 1973. In 1975, he proposed the **Pilot Plan for Programmed Conservation of Cultural Assets in Umbria**, which is a true milestone in Italian preventive conservation. In the introduction to the project, Urbani wrote that "Cultural heritage must not be dealt with separately from natural environment" and that "Cultural heritage is objectively limited" (Urbani, 2000, p. 103). These two sentences are in line with environmental mobilization. Urbani also stated that previous research is limited to visual and aesthetic perspectives, thereby disregarding the need to develop tools for addressing the effects of pollution on the physical matter of artworks: "Available techniques can improve the situation only under the aesthetic viewpoint, not under the conservative one" (Urbani, 2000, p. 104).

The **Pilot Project** encompassed various outputs, including evaluation of the "status of conservation" of regional heritage, intervention plans in pilot sites, field test outputs on decay processes, and research and educational programs.

The proposal was timely and in line with the European Architectural Heritage Year heralded by the Council of Europe, ending with the Declaration of Amsterdam for "a new policy of protection and **integrated conservation.**" Urbani used the term "beni culturali" (a relatively new term in 1970s Italy), which started an ongoing revolution. The term means understanding heritage not through the selection of masterpieces but through the detection of links and relationships. That is, naming heritage "beni culturali" means that heritage items are not seen as standalone objects but as a whole, within their territory. Moreover, items are valued and significant because of their relationships with the territory but less significant if treated individually, as is often the case. By contrast, if an object is removed from its context, such as placed in a museum, it will have certain value, but its real significance is largely lost.

However, the Pilot Project did not conduct activities in the field because of political difficulties. For example, a private company was supposed to be a technical partner of the Ministry as the public leader of the initiative, but private partnership was not welcome in Italy in the 1970s. After a few years and two disastrous earthquakes, which caused substantial damage to heritage buildings, Urbani launched a research initiative on the protection of monumental heritage against seismic risks. The research ended

up in a traveling exhibition, whose poor reception was a disappointment to Urbani, prompting him to resign 12 years before the end of his position at the ICR.

Recently, Urbani's ideas were revived and celebrated, and discussions on the plurality of his legacy emerged (Urbani, 2000; Basile, 2004, 2010; Minosi, 2005; Bon Valsassina, 2006; Zanardi, 2010; Lambert, 2010; Cecchini, 2012). Mainstream interpretations underscore Urbani's connection to his Brandian background and consequently, the continuity of his work in the ICR.

Urbani is less popular outside Italy, though a chapter is dedicated to him in a reference anthology edited by N. Stanley Price, M. K. Tally, and A. Melucco Vaccaro in 1996. This contribution emphasizes the role of conservation scientists in the conservation of cultural properties (Urbani, 1996). However, Urbani's passionate advocacy for programed conservation and maintenance is highlighted only in his short biography.

Paradoxically, Urbani's focus on the protection of material authenticity, thereby leading to the acceptance of changes in the appearance of old buildings and ruins, started arguments among architects keen on over-restoration, as if plaster and surfaces were merely layers to be replaced periodically. This approach is inconsistent with the two main messages left by Urbani, that is, the systemic vision of long-term conservation and the need to implement modern scientific tools.

The link between an object and its environment is the basis of Urbani's system, enlarging reflections and introducing issues that were perhaps previously irrelevant in the conservation field. When dealing with masterpieces, obviously, other concerns should not disturb the enjoyment of artistic quality. However, this is insufficient. Relationships with the environment should be examined as they become increasingly difficult, and conservation should organize enduring practices. In terms of these new requirements, the utilization of scientific tools and scientific research is obvious, given the focus on aesthetics. Urbani preached the need for a new professional figure, namely, the conservation scientist, who can apply cutting-edge scientific methods to artwork investigation and conservation problems.

These concepts are fundamental in designing a new preservation system based on scientific methods and oriented toward the prevention of loss rather than the rewriting of aesthetic appearance supported by a new type of professionalism.

Despite the abrupt end of Urbani's position as director of the ICR, his legacy was continued by his collaborators, specifically, the Risk Map project, which explicitly references the Umbria pilot project's theoretical framework. In fact, several activities were implemented in Umbria, such as courses on "technicians for the maintenance of artworks" (conserver—restorers) and laboratories for conservation, thereby increasing the resilience of the small region to forthcoming earthquakes (Proietti Bocchini, 2011).

5. The Risk Map and further developments

Ultimately, Urbani defined prevention as a matter of risk management, considering protected objects/properties in their context, thereby being prone to major environmental hazards. This vision underpins the Risk Map project, which aims to provide local authorities and the national government with a technological tool for supporting and safeguarding cultural assets in their territory.

The project develops part of the methodological content of the Pilot Plan for Umbria. In 1990, a law provided financial support for the implementation of the pilot plan, and scientific responsibilities were assigned to the ICR.

Developments are crucial from the technological perspective, and the Risk Map became a geographic information system (GIS) that enabled researchers "to calculate the intensity of the loss risk to which each monumental and historical artistic asset of the Italian cultural heritage is subject and also, give the opportunity to get acquainted with their distribution all over the territory through thematic cartographic representations that can be constantly updated" (Accardo et al., 2003a,b).

Moreover, the project developed through implementation in local contexts involving regional administrative levels. Specifically, the role of the Lombardy region in the Risk Map framework should be emphasized (Cannada Bartoli et al., 2003), as it promoted important advancements in terms of fine tuning the concept of planned conservation.

Notably, the working unit in the ICR continues to develop and update the Risk Map GIS, which has become increasingly interoperable with other data banks and functions. Moreover, the Risk Map's effectivity in the management of hazards and crises in several Italian regions has been verified. Therefore, the Risk Map serves as a reference for cutting-edge research on the digitization of cultural heritage protection (Acierno and Fiorani, 2019).

6. Architectural conservation after the Venice Charter

The first proposals in architectural conservation theses extending beyond the Venice Charter frame were focused on limiting, or possibly avoiding, decay, which is seen as an alteration to the state of equilibrium. Some of the most innovative proposals were focused on dramatic juxtapositions between a thorough conservation of the entire existing fabric and free and provocative additions allowing the reuse of historic premises. Marco Dezzi Bardeschi (1934—2018) was the most important herald of this tendency. In 2018, Dezzi Bardeschi's work was presented in China in a seminar titled Building on the Built (Ananke, 2019).

The target of material authenticity conservation, as contributed by Italy to the Nara conference in 1994, promoted an enduring shift in teachings, mainly in the so-called "School of Milan" (Di Biase and Albani, 2019). This contribution was also evident in operating practices, which foster the implementation of advanced surveying techniques, scientific applications for diagnosis, and highly sophisticated methods for strengthening and restoring authentic elements, thereby avoiding replacement. Apparently, this change was merely an evolved version of the concept developed by the Italian school on the restoration of artistic surfaces. Thus, consistency was evident. However, this conservative attitude was not shared by all

Italian academics. In fact, this tendency provided another reason for developing preventive conservation strategies to prevent decay, thereby increasing the efficacy of conservation processes.

Along these lines, the need for further theoretical efforts emerged over time. In the beginning, "to stop, or better to limit and slow (because stopping this process is impossible) the increasing entropy (that is disorder) of the system" seemed adequate. However, this position resulted in isolation, as if conservation is simply against innovation and change. Thus, the concept of "transformation management" became a new research focus. Reflections were oriented to discuss how to implement new processes to make conservation effective and how to develop a vision of conservation that does not exclude development. By replacing equilibrium metaphors with new metaphors based on the idea of "becoming," Amedeo Bellini (1996) created a highly articulate definition of architectural conservation: "Continuous change is a condition of our existence, and of things around us; change is the only certainty of our being, or at least of our experience … To conserve, therefore, can mean only the research of a regulation of transformation which, in the consciousness of the uniqueness of every evidence and of the multiplicity of its documental meanings, will make maximum the permanency, will add its own sign, will give new interpretations without destruction" (Bellini, 1996, 2000).

From Bellini's contributions, approaching the problems of use and accessibility (Arenghi et al., 2011) in a highly constructive manner without disregarding the objective of translating things for the future, maximizing permanency, and considering maximized permanency as a distinctive and coherent marker of projected transformation became possible.

Nevertheless, Bellini's definitions tended to improve restoration projects as architectural projects without renovating the entire process but rather only one phase. A "restoration/conservation project" should be more than an architectural project. In a "becoming" world, conservation should be achieved through a long-term strategy. Keeping a building in use without alterations is impossible. Although its function stays the same, a building will require certain changes. Buildings evolve in a dialectic manner with society; thus, the "coevolution potentialities" of old buildings should be exploited. Coevolution involves not only adaptation to new needs (which may be attained through one-time intervention) but also enduring dialectics of mutual influence between heritage and society (Della Torre, 2019).

Given awareness in managing the coevolution process, maximizing permanency requires coevolution strategies that operate through continuous adjustments. Therefore, we cannot use only the project and intervention tool, as different tools are necessary for managing the entire process.

The starting point that links these reflections to research and applications promoted by the aforementioned School of Milan is a highly dynamic and comprehensive understanding of built heritage. The concept of built heritage is no longer "monuments" defined by experts but living systems recognized by users and communities owing to multiple approaches and interests. Theoretical research on neo-Darwinian theories is the basis for a shift from defensive equilibrium metaphors (to consider the limits of development) to coevolution metaphors (to consider the development of limits), thereby ultimately establishing "a science and an ethic of diversity." Terms such as "diversity" and "dynamic identity" became common in international charters not by chance (e.g., the documents of Nara, 1994 and San Antonio, 1996).

This finding implies a change in the role of experts from persons who know the truth to persons who can understand and manage multiple values promoted by different stakeholders to enrich the overall value of cultural heritage as a factor of social connection.

In relation to this concept, objects of care are no longer "works" in their actual stationary state but potentialities for the evolution they entail. Conservation means to care for the potentialities of objects, which requires an integrated strategy of activity planning, including prevention tools, and the implementation of a new production cycle, which would necessitate a new definition of time, methods, competencies, and incentives.

7. Planned conservation: from events to processes

Theoretical reflections started numerous debates, which are occasionally summarized as the end of certainties. However, one point is definite, that is, contribution to conservation through diverse activities, such as prevention and maintenance, rather than only major interventions. This set of activities can be described as "degrees of intervention" when they are considered not as integrated parts of a process but a single action, that is, alternative remedial actions chosen according to a case (Fielden, 2005), or as the phases of one process when they are highly consistent and coordinated in the long run. The optimization of processes and development of tools became the focus of devoted research (Della Torre, 2018), entailing comprehensive studies on the implications and impacts of heritage policies. Such studies analyzed numerous pilot projects, especially in the Lombardy region, owing to the regulations and incentives first promoted by regional authorities and subsequently by the Fondazione Cariplo (Della Torre, 2003; Moioli; Baldioli, 2018).

In fact, a highly advanced definition of conservation as the output of a process of various activities was presented in 2004 in the national framework law on cultural heritage D. Lgs 42 (Della Torre, 2010a). Article 29 of this law states that "conservation is obtained through a coherent, coordinated and programmed activity of study, prevention, maintenance and restoration."

Therefore, restoration is no longer the only activity deserving a definition, as each activity, now understood as a set of tools with different objectives and procedures, works together for the same purpose. Thus, all activities have meaningful definitions.

Prevention is meant as "the set of activities useful to limit the situations of risk concerning cultural property in its context," referencing the need to consider territorial hazards, such as earthquakes, flooding, and landslides, and dangers due to human factors, including abandonment or

tourism pressure, to advance risk management techniques. This definition directly recalls Giovanni Urbani's legacy.

Maintenance is meant as "the set of activities and interventions oriented to the control of the conditions of a cultural property and to the permanency of its integrity, functional efficiency and identity." For the first time, the word "maintenance" (manutenzione) is used in an Italian preservation law. Notably, this definition is quite unusual compared with English terms used at the international level, where "maintenance" mainly means repairs and does not include control; thus, control activities can be conceived separately. However, the Italian definition follows a long debate on authenticity and risks of ill-planned repairs. Therefore, inspections and repairs are combined in the same activity, which aims to be complex and performed by qualified individuals.

Finally, "restoration" means "the direct intervention on a cultural property through a set of operations oriented towards material integrity and to recover the property itself, to the protection and transmission to future of its cultural values. In the case of historic buildings located in zones declared subject to seismic risk, restoration includes structural enhancement." This definition reveals a tendency toward an understanding of restoration that excludes the will to reproduce the past. However, what matters is the overall scheme, that is, conservation cannot be a single event. Any action is a phase in the frame of a broader strategy.

Article 29 identifies several crucial practical consequences. First, it identifies a new direction. Planned conservation is not the dream of certain scholars but the main direction chosen by the State. Second, Italian heritage laws previously enabled the State to finance restorations; however, they were not clear about everyday maintenance and preventive measures. The 2004 law explicitly enables the State to finance all conservation activities, including prevention and maintenance (i.e., including control, inspections, monitoring, and so on). Finally, it serves as a reference for other regulations that directly or indirectly concern cultural heritage. Hence, the implementation of the harmonization process modified other laws to the same direction, that is, allowing the use of a preventive approach for conservation. In 2017, the "planned conservation strategy" was designated as the main reference for public procurement of works on heritage assets (D.M. 154/2017).

An article of a law cannot change old attitudes and customs. After 15 years, Italian legal definitions remain more advanced than everyday behaviors. Nevertheless, the 10-year experience of Fondazione Cariplo grants supporting pilot interventions oriented toward the implementation of investigation, monitoring, and maintenance, which exert satisfactory impacts (Moioli and Baldioli, 2018).

The new approach requires new practices and tools, particularly, careful information management. International cooperation is fundamental in developing these practices, thereby providing a reference for good practices, such as inspections, risk preparedness, and people involvement (Van Balen and Vandesande, 2013).

8. An agenda for future trends: sustainability of planned conservation

A comprehensive approach to conservation was developed in Italy through a complex path, including Brandi's prophecy and openness to scientific techniques, Urbani's systemic and territorial vision, and a contemporary focus on processes and knowledge management. The framework law on preservation enforced in 2004 presents on paper a perfect integrated model based on a systemic vision, which is the perfect synthesis of what the Italian approach to conservation should be.

After several years, the agenda for the future remains focused on the implementation of such a model, which looks good on paper, spreading and making customary practices for the prevention of major hazards and the regularization of the different phases of the conservation and valorization process. The ultimate aim is to improve the proficiency and sustainability of protection practices. As the democratization of access to culture widens the audience, the number of protected buildings and sites increases, along with conservation costs. The question "Is Increased Public Spending for the Preservation of Historic Monuments Inevitable?" raised by Francoise Benhamou for the French case in 1996 can be applied to the Italian context (Benhamou, 1996). However, the solution is not to give up the protection of cultural heritage, following uncertain criteria on varying values. The correct answer was, and still is, strong research commitment to understand how cultural heritage produces value and to identify and implement improving practices.

The impacts of investment in culture on the economy are described in relevant research, such as Cultural Heritage Counts for Europe (CHCfE, 2015), and advanced models have been proposed recently (Sacco and Teti, 2017). Such research proposes a twofold understanding of the economic side of conservation practices. Identifying micro- and macro-economic levels is possible. The conservation process can be improved and integrated with enjoyment activities, thereby reducing overall costs in the long run for private owners and the public. The advantages of a highly consistent and carefully planned organization are demonstrated on paper and through pilot projects (Della Torre, 2010b; Ferreira, 2018; Van Roy, 2019). Notably, in the Italian context, advanced maintenance procedures are implemented only when the management is supported by a stable government with long-term vision. Elsewhere, the practical implementation of planned conservation remains difficult, as expected benefits are reaped in the long run, sometimes beyond the horizon of current governing systems. If evaluated at the micro scale, the cost—benefit balance seldom is positive in terms of net present value. In other words, a comprehensive approach should be implemented, as the most positive impacts of heritage practices on the economy and society are identified as spillovers and externalities, which require a strong management system to be recognized and valorized.

Meanwhile, the economic convenience of prevention becomes clear after disasters, such as earthquakes, which have become increasingly common in the Italian peninsula. The seismic sequence in 2016—2017 in central regions occurred soon after the allotment of public funds finalized heritage valorization, as if investments in conservation are sufficient. After the shock, a plan was studied for the prevention of major hazards, paying special attention to historic buildings and cultural landscapes (Struttura di Missione Casa Italia, 2017). Prevention of seismic hazards means strengthening structures and adding necessary structural devices but also keeping structures in a satisfactory state of repair, as exactly suggested by planned conservation.

In cases where new models are implemented, their proficiency can be improved by digital tools, which make advanced maintenance activities possible, such as with most cathedrals, where enduring good practices were established centuries ago (Capponi et al., 2012; Fassi et al., 2015; Fregonese et al., 2018; Cantini et al., 2020). Such cases prove that managing maintenance procedures, including advanced monitoring techniques and scientific investigations, despite the necessity of subsequent steps organizing not only early detection but also response procedures, is possible. These outstanding cases are also characterized by the critical mass of each case, which allows the implementation of proprietary systems tailored to the needs of a single cathedral (or major museum) management system. Therefore, these excellent examples risk being disconnected from the market. In this sense, research on information management to support the conservation process, grasping the progressive diffusion of building information modelling, is highly strategic. Research on the so-called "historic BIM" should avoid the risk of being limited to the representation of historic architecture. Instead, it should exploit the potentialities of electronic interoperable tools for the regularization of conservation phases (Della Torre and Pili, 2019).

Besides enhancing practices, regularization of the management process enables the exploitation of the externalities of enhanced conservation practices and their effects in terms of enhancing intellectual capital. In addition, the implementation of networking and constellation models for value creation can strengthen this integrated vision (Della Torre, 2015). After 2005, pilot projects addressed the issue of local development projects based on strategic recovery and reuse of historic properties, thereby implementing a long-term vision and establishing management systems focused on enhancing conservation practices. Thus, in terms of wording, it has become increasingly clear why the Italian approach emphasizes the term "planned" rather than "preventive" conservation.

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