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Spatial concepts in museum theory and practice

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Abstract

Since the beginning of space syntax, the field of museums has been a recurrent focus of inquiry in the syntactic literature. Over the years a body of studies of museums has been accumulated which use space syntax and its concepts to bring consistency and rigour to the analysis of spatial layout, and through this to relate museum space to different aspects of how they work. Amongst other themes, the studies have explored the relation between the layout of space and the communication of knowledge, museum space as a symbolic system, and the link between spatial layout and movement. Over the same period, there has been an increasing awareness of the spatial dimension in the museum studies literature, so much so that the problem of space is now one of its key themes. This literature addresses such problems as how we can conceptualize museum space through the idea of exhibitions as 'texts' and as 'maps', or the role of space in the 'interactive experience model' and in the learning experience of the visitor, as well as in the capability of the museum to embody theories, construct knowledge and produce meaning. By relating and comparing it with the space syntax literature, the paper brings to the surface common preoccupations and identifies many parallels between the space syntax concepts applied in the studies of museums and museological ideas of space, including the role of space in the collective nature of museum experience, the problem of intelligibility, and the part space can play in different modes of acquiring information. But beyond these two areas of rich spatial ideas about museums, it will be argued that there is a third: current museum practice. With the freeing of museum architecture from stereotypes, and the greater emphasis on 'the visitor's encounter with the museum and its collections', the later part of the twentieth century and the early twenty-first century has seen radical experimentation and innovation in the design of museum space. A number of recent museum projects are analyzed and discussed in the paper, selected to illuminate different ways in which spatial design becomes part of the individuality of each museum and the distinctive experience it offers the visitor. It shows, for example, how some cases lead visitors to see intricate linkages between times, places and objects, reflecting the curatorial idea that cultures interact with and influence one another, while in others, it gives them an embodied experience of places and monuments by adding the sense of topography to that of chronology. This examination suggests that these real museum projects embody concepts of space which are in some senses more advanced and complex than found in either of the literatures, and so might be said to be pointing in new directions theoretically. Finding a way to bring together the spatial concepts in all these three areas will be, it is argued, an important next step in the field of museum research.

Keywords

Museum space, building layout, museological ideas of space, syntactic studies of museums.

1. Introduction

Since the beginning of space syntax, museums have been a recurrent focus of inquiry in the syntactic literature. Over the years, studies have accumulated which use space syntax and its concepts to bring consistency and rigour to the analysis of spatial layout, and through this relate museum space to different aspects of how they work. Space became the unifying theme in studies of museums whose functional focus ranged from the organisation of movement to the role of museum space as a symbolic system. Over the same period, there has been an increasing awareness of the spatial dimension in the museum studies literature, so much so that the problem of space is now one of its central themes. The *physical* context of the museum is seen as one of the key factors that make up the experience of visiting. Together with the *personal* (visitor's experiences, knowledge and interests) and the *social* context (accompanying group, other visitors, staff), they create what Falk and Dierking (1992) call the 'Interactive Experience Model'. The museum studies literature also addresses a diversity of problems, such as how we can conceptualize museum space through the idea of exhibitions as 'texts' or 'maps', and the role of space in the learning experience of the visitor, as well as in the capability of the museum to express theories, construct knowledge and produce meaning, including through the viewer's embodied responses. In the first part of the paper we propose to look selectively, and in parallel, at the space syntax concepts applied in the studies of museums¹ and museological ideas of space, through a series of themes, which bring to light common preoccupations and convergences.

But, it is argued, beyond these two areas of rich spatial ideas about museums, there is a third: current museum practice. With the freeing of museum architecture from stereotypes, and the increasing attention given to '*the visitor's encounter with the museum and its collections*' (Macdonald, 2006, p.11), the later part of the twentieth century and the early twenty first century have seen radical experimentation and innovation in the design of museum space – including '*a greater emphasis on the visitor's own perceptions and body*' (Henning, 2006, p.91) and the role of '*the total physical environment itself*' as the attraction (Williams, 2007, p.97). As Serota argues, '*our aim must be to generate a condition in which visitors can experience a sense of discovery in looking at particular paintings, sculptures or installations in a particular room at a particular moment, rather than find themselves standing on the conveyor belt of history*' (2000, p.55). Against this background, in the second part of the paper, we look at a number of recent cases – mainly museums of art and archaeology – that illustrate how architecture is used to add new dimensions and experiences to the display of art and cultural heritage. The cases are selected from the point of view of how the museum represents time in space, in the belief that the space-time relation is both a key theme in museums and a basic expression of the relation between architecture and museology. This examination leads us to suggest that these museums embody concepts of space which are in some senses more advanced and complex than found in either of the literatures, and so might be said to be pointing in new directions theoretically.

2. Linking syntactic concepts with museological ideas of space

2.1 The museum as 'configuration' and as 'text'

The fundamental premise of space syntax is the idea of *configuration* – that as organised space, museum buildings are ensembles: how parts are configured to form wholes is more important than parts in isolation. So the way museum layouts are used and how they function is not only about the properties of individual spaces, but about the relations between spaces and how they affect each other by coexisting simultaneously.

This concept of configuration can be paralleled to one of most influential approaches in recent years in museum studies, the ideas of the museum as *language* and as *text* – see for example Hainard (1989 cited in Desvallées et al., 2011, p.152) and Davallon (1999). The analogy is based on the idea that the exhibition works as a communication system (see Deloche, 2011), and that meaning is provided not only through the simple presence of objects, but through their arrangement and the use of resources to decode it (Desvallées et al., 2011, p.149-163). The curator selects an object, like a

word in a dictionary, and this, by being integrated into the exhibition, changes status, becomes part of a whole, and is given meaning. As Hainard writes (1994 cited in Sunier, 2005, p.583), *'the object is not a witness, it is in the service of a discourse... An exhibition is a state of the question in a given moment, it is not the truth'*. So, it is argued, the route through the exhibition becomes a discourse, representing the development of the exhibition argument (*ibid.*, p.582).

A double meaning is given to the idea of museums as texts by the linguist Ravelli (2006). In her book 'Museum texts', she addressed both issues of *'texts in museums'* as well as *'spaces such as exhibitions [which] can be read and experienced as meaningful texts'* (2006, p.10). According to Ravelli, *'an exhibition, created through an organization of exhibits and spaces, a selection and construction of content, and a construal of role relations, is a meaningful text: it is a space that visitors move through, and a space which they "read"'* (*ibid.*, p.123).

The cultural theorist of museums Mieke Bal (1996; 2007) has also made use of the language analogy, analyzing what she calls the 'language' of museums as 'spoken' through *'the signifying juxtaposition of objects'*. For Bal *'walking through a museum is like reading a book'* (1996, p.4), but there are two narratives: the textual narrative linking the objects to their functional and historical origins; and the spatial narrative resulting from *'the sequential nature of the visit'* (*ibid.*). The latter must be taken seriously as *'a meaning-making event'*, since the narrative can emerge from the viewer's walk (2007, p.71) in exhibitions where heterogeneous objects *'cohere because of the narrative constantly "under construction"'* (*ibid.*, p.75) by the viewer.

2.2 Movement and 'spatial' interactivity

In the search to understand how displays are perceived and read by visitors, syntactic studies have contributed by analyzing the patterns of accessibility and visibility in museum layouts, and the role of movement in the exploration of the content of the museum and the production of meaning (see for example Psarra, 2009; Tzortzi, 2015). It has been shown how spaces can be differentiated in terms of how they form layouts as systems of spatial connections, and that this system affects the way people move in space, and in the case of museums, this also means the way they experience and understand them. Spatial design alternatives (such as those proposed for the extension to the National Gallery, London – see Hillier et al., 1982) have been compared and evaluated, showing how selecting one over another would create a different visiting style, or *spatial culture*. In more recent studies, Peponis and Wineman (Peponis et al.; 2004; Wineman and Peponis, 2010) shifted attention from the scale of the whole building to the microscale of a single exhibition space, and showed how in a permissive, open layout, allowing almost any pattern of movement and with unobstructed visibility, spatial parameters such as direct accessibility and cross-visibility had a powerful effect on the way in which people explored the exhibitions.

In contrast to the rigorous analysis of visitors' movement in the syntactic studies of spatial layout, in the museum literature it is acknowledged (Brawne, 1982, p.9) that *'the word "museum" will often evoke a particular character of buildings, rarely however, a particular space organization'*. However, the configuration of circulation is given detailed attention (for example, Brawne, 1965; Huber, 1997) as a key concept in museum design. Interestingly, from a syntax point of view, Brawne draws a distinction between the topological (pure relations) concept of the single sequence with the geometric concept of linear continuity. Comparing the sequence of corridor-like interconnected spaces at the Louisiana Museum of Modern Art, Denmark, and the spiral arrangement of spaces at the Guggenheim Museum, New York, he concluded: *'what matters in all these plans is not so much their geometric configuration as the relationship between spaces in terms of continuity and linearity; in this sense, a straight line and a spiral [...] are identical. It is the relationship in terms of topology which directly affects the circulation routes and thus the functioning of the museum'* (1982, p.13).

Exhibition layouts are also often discussed, in museum studies literature, in conjunction with educational theories (mainly by Hein, 1998, and Black, 2005). *'Sequential exhibitions, with a clear beginning and end, and an intended order'* (Hein, 1998, p.27; Black, 2005, p.148) are seen as based on the didactic, or stimulus-response, model of education, and exhibitions that *'allow exploration, probably including going back and forth among exhibit components'* (Hein, 1998, p.33) are seen as

organized on *'discovery learning'* lines. Both are contrasted to *'constructivist'* exhibitions that would have *'many entry points, no specific path and no beginning and end'* (Hein, 1998, p.35; Black, 2005, p.148), reflecting the *'constructivist'* conception that education is *'meaningful experience'* rather than *'defined content outcome'* (Hein, 2006, p.346), and that learning in the museum takes the form of meaning-making by visitors (*ibid.*, p.347).

The exhibition design which gives visitors the possibility of different routes (and so, readings) and, as a consequence, *'an active role in the process, becoming co-authors in the production of meanings'* (Witcomb, 2003, p.143) has been termed by Witcomb *'spatial'* interactivity. This is distinguished from *'technological'* interactivity, and the organization of movement in such an exhibition, which encourages exploration, both spatially and conceptually, and lacks linear organization and strong narrative structure, has been compared to a hypertext program.

2.3 Intelligibility, and visitors' *'power to select'*

Intelligibility is a key measure in space syntax methodology and is considered an important guide to how a layout works. It is defined as the degree to which what can be seen from individual spaces in the layout gives a good guide to the position of that space in the layout as a whole. Syntactic research has shown that the spatial layout can contribute to the intelligibility of a museum setting, both as a potential navigational aid to visitors (as in the case of Tate Britain – see Hillier et al., 1996) and as *'an intelligible framing environment within which they engage with the exhibits'* (Peponis, 2010). The latter is also a key concern in museum studies literature, where it is argued that architectural space should provide an intelligible framework, so that visitors can *'successfully process their (logistical and conceptual) experience'* (Hein, 1998, p.160) and, through a clear organizational structure, acquire *'the power to select for themselves what to see'* (Black, 2005, p.149; 2012, p.69, 92) and so *'create their own meaning'* (Black, 2005, p.191).

Related to this is the search for a better understanding of the contextual factors that make exhibits attractive or unattractive to visitors. Monti and Keene (2013) have used syntactic concepts and techniques to identify *'factors which can transform the display of a silent object into an exciting and interesting encounter for the visitor'* (2013, p.4). In terms of space, it was found that in general the layout of displays, the location of objects, and the vista, defined the direction of visitor flow. So it was proposed that *'charming objects could be placed in less frequented places, thus encouraging a wider spatial exploration'* (*ibid.*, p.245), while *'occasional inconspicuous objects could then be centrally displayed'* and related to lines of sight *'to draw attention'* to them, making also in this way *'a statement about the existence of interesting content'* (*ibid.*, p.245-246).

2.4 Knowledge implications of layouts and museums as *'maps'*

The relation between space and the communication of knowledge has been a key theme in syntactic studies, since the first published syntactic study on museums. Peponis and Hedin (1982) explored the relation between the layout of space in the Natural History Museum, London, and the communication of ideas of scientific knowledge and its forms of transmission, and showed how the arrangement of spaces in the nineteenth century layout of the *'Birds Gallery'* reflected classificatory eighteenth century ideas of nature, and the 1980s layout of the *'Human Biology Hall'*, the nineteenth century theory of evolution.

To analyze the different ways museological intent is mapped onto space, subsequent studies (Pradinuk, 1986; Zamani and Peponis, 2010) used two key concepts proposed by the educational sociologist Basil Bernstein (2005) for the transmission of knowledge, and transposed them to a more overtly spatial interpretation: the concept of *'classification'* (meaning the strength of the boundaries between contents of knowledge) was spatially interpreted in terms of the degree of visibility between spaces; and the concept of *'framing'* (meaning the control of transmission from teacher to taught) as the degree of spatial sequencing. These concepts have also been used by Ravelli (see above) to interpret the two factors that, she argues, are related to the way exhibitions make

meaning: the arrangement and placement of displays, and the direction and control of visitor pathways.

The question as to how the arrangement of space and objects can both reflect and create meaning has been extensively discussed by Whitehead (2005; 2009; 2011; 2012; Whitehead et al., 2012). He argues first that museum representations, such as displays, *'are in a sense embodied theory'* (2009, p.20, 24), through, as he quotes from Lidchi (1997), *'the poetics of exhibiting, i.e. "the practice of producing meaning through the internal ordering and conjugation of the separate but related components of an exhibition"'* (2009, p.26). But, he adds, museums operate theoretically, not only to represent a discipline (*'Museums are not "mirrors" and their representations are not mere "reflection"'* – 2012, p.23), but also to create knowledge, by structuring *'specific kinds of articulation between objects and between knowledges'* (2012, p.23). Whitehead suggests a spatial analogy: the comparison between museums and maps (2009; 2011; 2012), in two senses: the assembling within the museum of a geographical and temporal map of locations which are remote from the museum, but which are defined, classified and ordered in a theoretical way; and the spatial layout of the museum through which the visitor experiences the objects. In this sense *'the map is not a metaphor for the museum'* (2009, p.48-49), *'precisely because maps and museums are made of spatialised knowledge'* (*ibid.*, p.137).

2.5 Embodied experience and affect

Beyond the idea of museums communicating knowledge and narrative, syntactic studies have also addressed the idea of the museum working as a pedagogy aimed at transmitting non-narrative meaning. Stavroulaki and Peponis (2003), in their analysis of the Castelvecchio Museum, show how *'museum space supports an embodied and immersive pedagogy aimed at ways of seeing'* (2003, p.66.11). They demonstrate that the seemingly free spatial arrangement of sculptures revealed, on closer inspection, a deliberate configurational pattern which became clear through movement: the statues became more than objects to be seen, as distant viewing was replaced by embodied experience.

The idea that the analysis of museum experience should attend to the sensory aspects of exhibition experience is a key idea in an emerging field of museum research that focuses on the affective impacts of spaces and objects on visitors and their role in the creation of meaning. For example, Witcomb (2010; 2013) explores how, in a recreated historical village in Western Australia, the nature of spaces and the relations between them combine with the appearance of objects to create responses which are embodied and performative, rather than simply cerebral, a strategy that she calls *'pedagogy of feeling'* (2014, p.58).

At a more theoretical level, Schorch explores how *'embodied meanings or feelings and their narrated representations are tightly interwoven dimensions of the experience of a museum space'* (2013, p.194). He investigates this through in-depth, semi-structured interviews with a group of *'global visitors'* from different parts of the world to the Museum of New Zealand Te Papa Tongarewa, followed up by a second interview by phone six months later. For some visitors, the nature and organization of spaces, and the location of exhibits in them, were after six months *'the most "memorable thing"'* (*ibid.*, p.201). In all these studies, *'the material aspects of the exhibition... – its spatial and aesthetic qualities, the use of immersive environments that encourage sensorial and embodied experiences beyond a cerebral use of vision'* play a role in the process of making meaning (Witcomb, 2014, p.59).

2.6 The social dimension of the visit and the museum as a social space

Central to space syntax is the idea that architecture shapes the generic functions of buildings – movement and co-presence. The relation between spatial layout and the moving and co-presence patterns of visitors in museums has been explored in syntactic studies from the early 1990s onwards (Choi, 1991; 1999; Hillier et al., 1996). It has been shown how, beyond the programmed space that the museum provides to accommodate encounter, the layout itself can affect the social dimension

of the visit, by bringing together people exploring the museum in different ways. Interestingly, the social dimension of the visit is seen not only as the sense of co-presence and co-awareness with other visitors, but also its role in the '*socialization of people into knowledge*' (Peponis and Hedin, 1982, p.25) by generating a more collective or individualised interaction between people and objects. This is also a preoccupation in the museum studies literature, for example in the social context in Falk and Dierking's 'Interactive Experience Model' (see above).

Intriguingly, in both literatures, the Guggenheim Museum, New York, is proposed as a case where the two aspects of museum experience, of objects and of other people, are richly integrated. According to Peponis (1993, p.60), its spatial layout creates a '*built choreography of movement and encounter*', while for Basso Peressut (1999, p.29) it best expresses the theatricality of the setting of the contemporary museums, where '*the mise en scene of visitors becomes part of the contemplative function of the "mise en exposition of the works of art"*'. Basso Peressut also underlines the integration of public spaces in museum buildings, for example in the Centre Pompidou, as an expression of the museum as a social space, or in the Carré d'Art in Nîmes, where people moving outside, in the piazza, and visitors exploring the interior of the museum appear like performers on the same stage (*ibid.*, p.45).

The social function of museum space in metaphorical senses is also discussed in the museum studies literature. The concept of the museum as a public space is expressed in the spatiality of the museum building, seen as a signal of its inclusiveness and accessibility (Barrett, 2011, p.89), or is reflected in its goal to be an '*arena of discussion*' (*ibid.*), and its engagement with issues of public importance (*ibid.*, p.95). In all these senses, it is proposed, the museum is part of the public sphere.

3. Spatial ideas in practice

These parallels show intriguing convergences between the space syntax concepts applied in the studies of museums and museological ideas of space. But they also point to what Whitehead identifies as the absence of '*an appropriate language to describe display other than display itself*'. For example, he contends, the limits to the textual approach, lie in that it '*does not capture the meanings made through the interrelations between sense perception [...] affect and temporal and physical movement through space... Display, understood (not read) in a sensorial sense is beyond text*' (2009, p.37). As Williams (2007, p.77) adds, this absence is '*at odds with visitors' experiences where the encounter with the physical dimensions of any site, and with other people, is [...] wholly integral*'.

At the same time, however, museum practice suggests that '*the experiential and performative aspects of museums*' (Henning, 2006, p.2-3) are acquiring greater attention, and emphasis is increasingly given to the sensory form of understanding. More specifically, it is argued (Casey, 2003; 2005) that historically museum practice has evolved from the 'legislating' mode, where the objects speak for themselves, to the 'interpreting' mode, where a label, theme, or narrative is added to facilitate meaning, and to the current more 'performative' mode (Casey, 2005, p.85), where there is an '*increased theatricality in exhibition design*' and '*meaning is communicated through modes of display*', so '*no longer tied to the object but created by the interaction between the viewer, the message, and the museum*' (2003). So next we will shift attention from theory to practice to see how spatial ideas are applied in cases which could be seen as 'performative' in a spatial sense. As suggested earlier, we will focus on the space-time relation and look at museums which use design to express this relation in fundamentally different ways, and, through this, go beyond reinforcing an interpretative narrative, to complement it with additional meanings and modes of understanding.

We will begin with the Laténium (2001), an archaeological museum on the lake of Neuchâtel, Switzerland (Figure 1), where the sequential route through the museum represents the passage of time, but in reverse order. The display starts from the Middle Ages and goes back to the Paleolithic period, and is arranged on different levels, linked by open visual relations. These relations, coupled to the changes of level, invite the moving visitor to become aware of the display from different historical points of view, including his/her own; while the vertical organisation of the itinerary, combined with the backward narrative in time, introduce visitors experientially to the idea of stratigraphy. As the architect Laurent Chenu observes, '*the architecture of the Museum gives form to*

the experience of time' (2001, p.68), and indeed the experience of time as seen by archaeologists (Briner, 2009, p.17).



Figure 1: Laténium, Neuchâtel © Laténium

The idea of 'Crossing Cultures, Crossing Time' is the theme of display in the new Ashmolean Museum, Oxford (Figure 2), re-opened in 2009, after the completion of the extension designed by Rick Mather. The collections are arranged broadly chronologically and by culture, but are laid out in space in a way that leads the visitor to see intricate visual linkages between times, places and objects, reflecting the idea that cultures interact and influence one another and *'share a connected history'*. This is closely related to the spatial design of the building,² with its glass walls and bridges connecting galleries on neighbouring floors and sections. The emphasis here is on visual relations. The *'interlinking of gallery spaces and the carefully constructed views and vistas on and between floors'*, argues the Director Dr Christopher Brown, *'are a powerful manifestation of the [display] theme'*, so that *'the relationships between galleries are often as important as the galleries themselves'* (Ashmolean: Britain's First Museum, 2009, p.1).

If in the previous cases the relations of spaces represent some kind of time relations, in the Museum of Byzantine Culture in Thessaloniki (Figure 3), designed by Kyriakos Krokos in 1994, linear movement is dissociated from the representation of time. The layout, seemingly complex, is in effect a continuous ring, going from the lowest to the highest point, where a staircase and a final gallery lead back to the start. Galleries are organized as distinct spaces on either of the two sides of a corridor. The corridor, though devoid of any display cases and exhibits, becomes the key spatial theme of the museum, with the movement of visitors separated from the viewing of exhibits.³ By assigning the corridor a neutral character, the architect gives the visitor control over the reading of the display and so independence of time.



Figure 2: Ashmolean Museum, University of Oxford: View of Ashmolean Atrium © Ashmolean Museum, University of Oxford

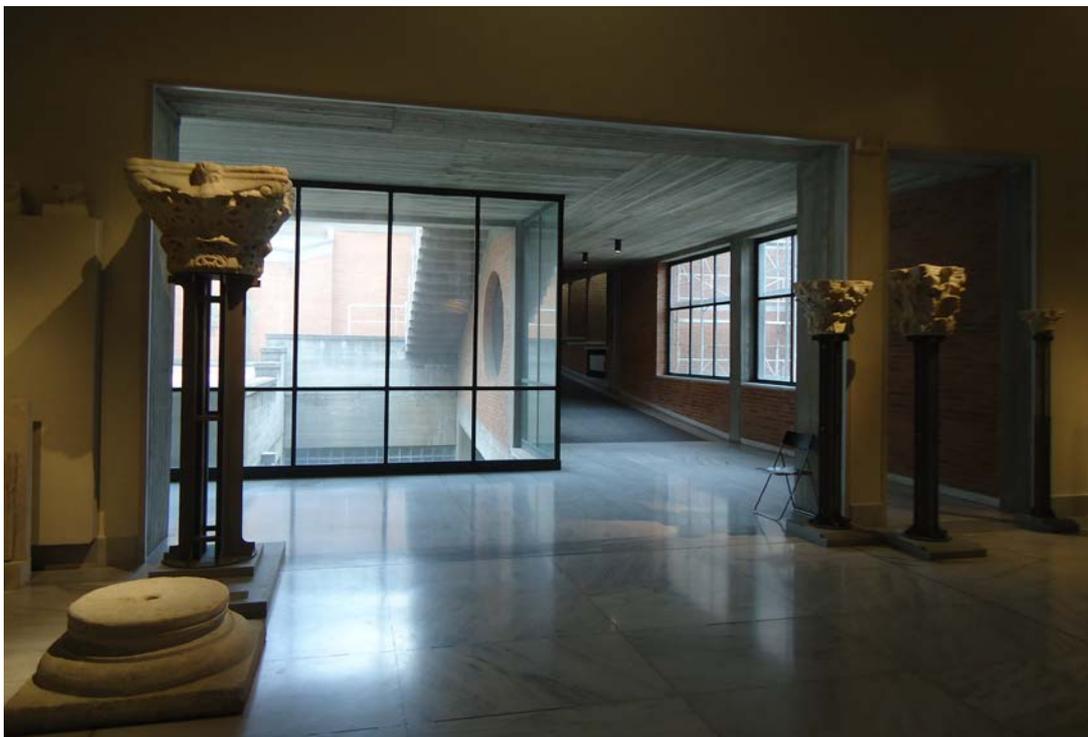


Figure 3: Museum of Byzantine Culture, Thessaloniki © Museum of Byzantine Culture, Thessaloniki

As he explains: *'I wanted a space within which movement would create a feeling of freedom [...] and where the exhibit would be the surprise within the movement. I wanted to avoid that coercion you feel in a museum, when you are forced to look at a lot of works in a specific order'* (1989, cited in Arvaniti-Krokou et al., 2012, p.74).

A more dramatic interpretation of time through space is found in the Jewish Museum, Berlin, by Daniel Libeskind (1999) (Figure 4). Instead of time becoming space through the sequencing of galleries, time is compressed into single spatial experiences representing events which took place over years or decades. So the Holocaust and Exile are expressed by the form and content of a single space, located at the end of an axis: the Holocaust Tower and the Garden of Exile. In this sense, the spaces of the building itself become the exhibition. As Libeskind explains, through this, he sought *'to create a new Architecture for a time which could reflect an understanding of history'* (cited in Bitter 2011, p.73).

A sense of space is added to that of time through spatial design in the case of the new Acropolis Museum in Athens (Figure 5), by Bernard Tschumi, opened in 2009. Its design is shaped to a large extent by the site: it is built above the exposed archaeological remains of the city, and in the immediate visual environment of its subject, the Acropolis, while its top level emulates the geometry and orientation of the Parthenon. The visitor is taken through a chronological narrative from prehistory to late antiquity, moving up from the ground floor representing the slopes of the Acropolis, to the upper floor dedicated to the Parthenon. So the route acquires a symbolic function, in terms both of time and space. But, while the display narrative stresses historical sequence, the spatial design synchronizes time by limiting views from one exhibition space to the next, and so from one historical period to another, and by creating vertical visual links across exhibition levels, including through transparent floors, and powerful views to the historic urban context and the contemporary city outside (see Tzortzi, 2011, p.45-49). Thus the design adds to the narrative a more immediate and spatial understanding of the Acropolis as a place across time, rather than simply in history.

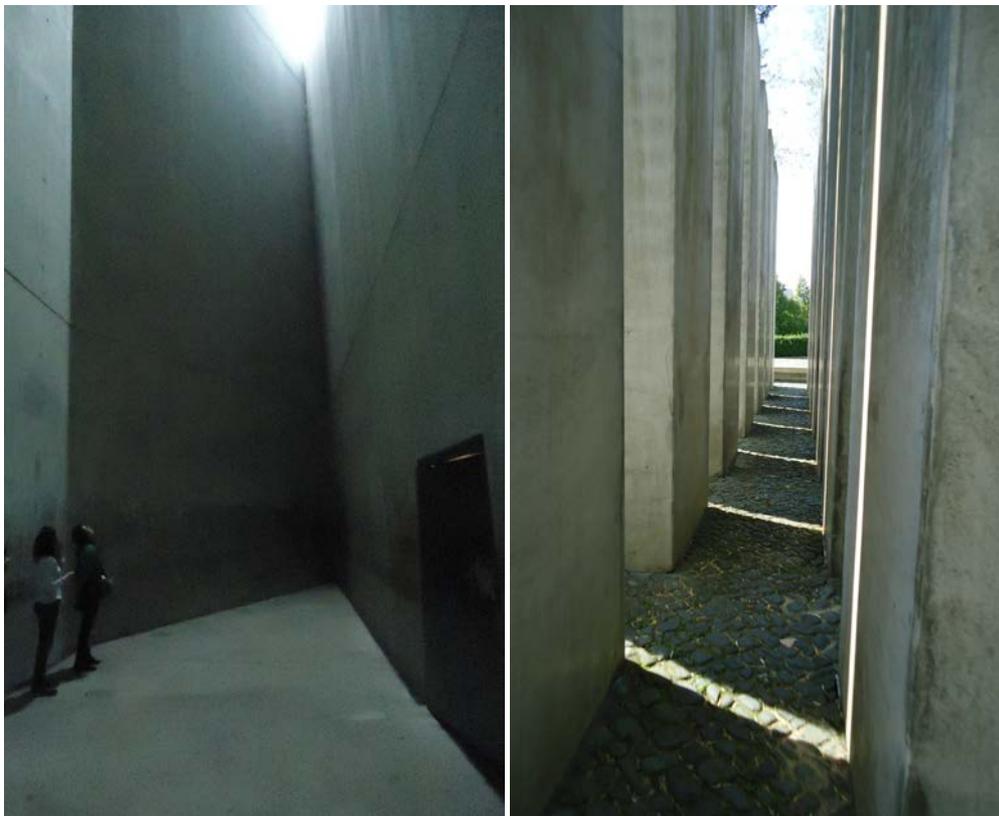


Figure 4: Jewish Museum, Berlin © Jewish Museum Berlin



Figure 5: Acropolis Museum, Athens © Acropolis Museum

'A more complex experience of time and history' (Giebelhausen, 2012, p.243) is offered by our last case, the Neues Museum, Berlin (Figure 6), which re-opened in 2009, after the restoration work by David Chipperfield. The museum *'speaks eloquently of the passage of time'* (*ibid.*, p.243), although its heterogeneous – Neolithic, Egyptian and historic – collections are not integrated into an overall chronological narrative, but are organized geographically and thematically, with the original unifying concept of the display, the Hegelian concept of linear progress, no longer holding. The key feature of the 'new' Neues Museum is the way it makes the visitor aware of *'a temporal pluralism'* (Barndt, 2011, p.307) through the spatial context, by constantly manifesting the layers of history inscribed on the fabric of the building, including its near destruction in the World War II. The museum, with its traces of destruction, broken columns, fragments of friezes, *'partially reconstructed original décor'*, *'stages the passage of time'* (Giebelhausen, 2012, p.234), together with the different aspects of the past – the collections, the German history of the 19th and 20th century, the tradition of archaeology, and the significance of Berlin as a centre for scientific and research. So, Waterfield (2010) concludes, it *'recalls the past through physical form as well as contents, acts as a memento mori, to make an overt comparison between the departed civilisation whose artefacts it celebrates (or mourns) and the semi-departed culture that inspired the institution, and whose scars it bears'*.

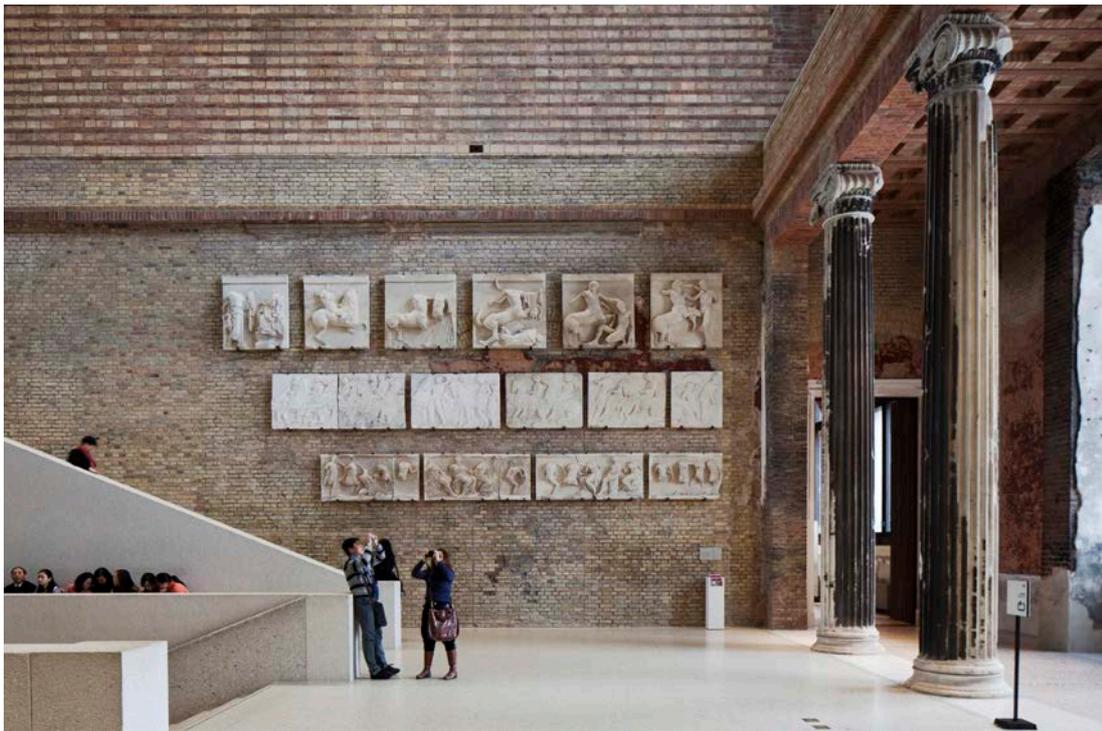


Figure 6: Neues Museum, Berlin © SMB / David Chipperfield Architects, photo Ute Zscharnt

In all these cases, architectural design becomes part of the individuality of the museum and the distinctive experience it offers the visitor, by creating a unique expression of the relation between space and time, realized in contrasting ways. For example, both the Acropolis Museum and the Jewish Museum can be said to spatialize time, but using contrary techniques: in the Acropolis Museum, it is by the increase in visual scale and connection, inside and outside the building, as the visitor moves, which creates a growing topographical sense of the Acropolis as place; in the Jewish Museum, it is by the creation of small, spatially segregated and visually isolated spaces, at the end of single lines of sight and movement, which the moving visitor discovers as an experience of history. Similarly, the rich visual connectivity in the Ashmolean exhibition spaces can be contrasted with the separation of movement from exhibition spaces in the Museum of the Byzantine Culture; or the complexity of the sense of time created by the patterns of spatial and visual links in the Laténium, with that created by the physical architecture in the Neues Museum.

4. Concluding remarks

These cases show how, over and above ‘performative museology’ (Frey and Kirshenblatt-Gimblett, 2002, p.59), the architecture of the building can itself be performative, in the sense that it can contribute profoundly to the intellectual and affective impact of the museum. At a deeper level, they also suggest that museum practice may use complex spatial concepts, such as expressions of space-time relations, and techniques to realize them, which are not yet addressed explicitly in either the museological or syntactical literature. For example, in all the cases we have discussed, the relations between spatial connectivity, and so movement, and changing visual fields, were critical to the ways in which the distinctive ideas of space and time were expressed. It could be argued that intensive analysis, as found increasingly in the museological literature as well as in the syntactic, could help to clarify their morphology, and perhaps also bring to light more of the feelings and experiences that museums can create ‘beyond text’.

It can then be suggested that there are three bodies of knowledge, each contributing in its own way to the spatial understanding of the museum: space syntax, providing spatial analytic techniques to facilitate the understanding of layouts; museology, relating space to the socio-cultural, cognitive and

affective roles of the museum; and the reality of museum design, bringing in creative experimentation and exploration. Each independently generates penetrating insights, but the critical potential would seem now to be to link them together in research studies which allow their inter-relations to be explored, theorized together, and developed as a more integrated body of museum knowledge.

Notes

¹ A fuller overview of syntactic studies of museums is proposed in Hillier, B. and Tzortzi, K. (2006), 'Space syntax: the language of museum space'. In: Macdonald, Sh. (ed.), *A companion to museum studies*, Maiden; London: Blackwell Publishing, p.282–301; also in Tzortzi, 2015, p.91-101.

² For a syntactic analysis of the three atria of the Ashmolean Museum and their effects on visitors' behaviour, see Lazaridou, A. (2013), 'Visibility and permeability relations in three-dimensional cultural environments: The Ashmolean Museum as a case study'. In: Kim, Y. O., Park, H. T. and Seo, K.W. (eds.) *Proceedings of the Ninth International Space Syntax Symposium*, Seoul: Sejong University, p.013.1-013.17.

³ For a rigorous visual and spatial analysis of the exhibition context of a painting in the Museum of Byzantine Culture, see G. Stavroulaki's PhD thesis 'The spatial construction of museum meaning', National Technical University of Athens, 2008 (in Greek).

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