The Art Museum as a City or a Machine for Showing Art?   Ref 117

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Abstract
This paper presents the comparative analysis of the National Museum of Modern Art, at the Pompidou Centre, Paris, designed by R.Rogers and R.Piano (1972-1977), and the Tate Gallery of Modern Art, London, by J. Herzog and P. de Meuron (1995-2000). The two museums share a set of conspicuous similarities so that their parallel investigation seems self-evident. Both are big scale national museums, in buildings that constitute urban landmarks, and with their ground floors conceived as a space you walk through, as a 'piazza'. More interestingly, they share in common underlying organizing principles –such as, grid structure and spatial order-, and similar spatial themes –the idea of the main axis, the organization of spaces into manageable sequences, the attention given to the global structure. Their affinities extend to their collections -both begin with the turn of the twentieth century and extend to the twenty-first century-, and their curatorial practices – as, for instance, reprogramming the galleries on a regular basis. But the experience of visiting the two museums seems entirely different, and each appears to have its own idiosyncratic spatial character, quite distinct from the other, described metaphorically by the museum designers as the museum as a city and as a machine for showing art. So, could these obvious similarities hide critical differences between the two museums? Their comparative analysis and space use study -developed in the first three parts of this paper-, show that strategic differences derive from the way their common elements are embedded in quite different configurations, and the way their spatial qualities are handled in relation to display decisions. This results in two contrasting visiting cultures: from the way their layouts structure paths sequences (complex and hierarchical arrangement vs simple and equalitarian), the way their particular ways of organizing space and objects synchronize contacts between visitors (co-awareness vs co-presence), and impact on visitor patterns (selective routes vs exhaustive paths, heterogeneity vs uniformity in the viewing pattern), to the mode of using space (as a narrative device or as a functional end in itself), and the way the global structure serves (or contrasts with) the intended spatial unfolding of art and affects the display culture (interpretation vs direct appreciation of works). To enrich our arguments, the concluding part of the paper draws attention to two most recent museum designs of the above architects -the Schaulager, Basel (2003), created by the Swiss partners, and the Zentrum Paul Klee, Bern (2005), designed by R. Piano-, which by offering intriguing parallels, raise the question of a coherent spatial style, of similar spatial means in the range of alternative design solutions proposed by the same architect within the same field, shifting thus attention from the question of architectural necessity to that of spatial aesthetic.

Introduction

This paper presents the comparative analysis of the National Museum of Modern Art, in the Pompidou Centre, Paris, designed by R.Rogers and R.Piano (1972-1977), and the Tate Gallery of Modern Art, London, the conversion of an industrial building by J. Herzog and P. de Meuron (1995-2000). The two museums share a set of conspicuous similarities so that their parallel

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investigation seems self-evident. Both are big scale national museums of modern art, extending in two floors, in buildings that constitute urban landmarks and are often seen as examples of the museum as a box. [Figure 1a-b] Their ground floors are conceived as a space you walk through, as a 'piazza'; their spatial organization is modular and flexible; their visual construction, punctuated by powerful views to the city. Moreover, they are guided by similar spatial ideas and share in common fundamental morphological properties. Interestingly, their affinities extend to their collections -both begin with the turn of the twentieth century and extend to the twenty-first century-, and their curatorial practices –as, for instance, the practice of reprogramming the galleries on a regular basis. But the experience of visiting the two museums seems entirely different and each appears to have its own idiosyncratic spatial character, quite distinct from the other (described metaphorically by the museum designers as the museum as a *city* and as a *machine for showing art*). So, could these obvious similarities hide critical differences between the two museums? Here we present an attempt to capture these differences by using space syntax as a *theory of description* for spatial layouts, drawing heavily on, but not reproducing, the quantitative aspects of the analytic studies which made it possible and which are reported *in extensor* in (Tzortzi 2007). To our analysis and space use study -developed in the first three parts of this paper-, two things account for their strategic variation: the way common elements are embedded in quite different configurations, and the way spatial qualities are handled in relation to display decisions. This results in two contrasting visiting cultures, as reflected in the spatial behaviours of visitors, particularly their paths of exploration, their patterns of viewing and their emergent patterns of co-presence and co-awareness. The concluding part of the paper shifts the attention to two most recent museum designs of the above architects -the *Schaulager*, Basel (2003), created by the Swiss partners, and the *Zentrum Paul Klee*, Bern (2005), designed by R. Piano-, which by offering intriguing parallels, come to enrich our arguments and open up new research directions.
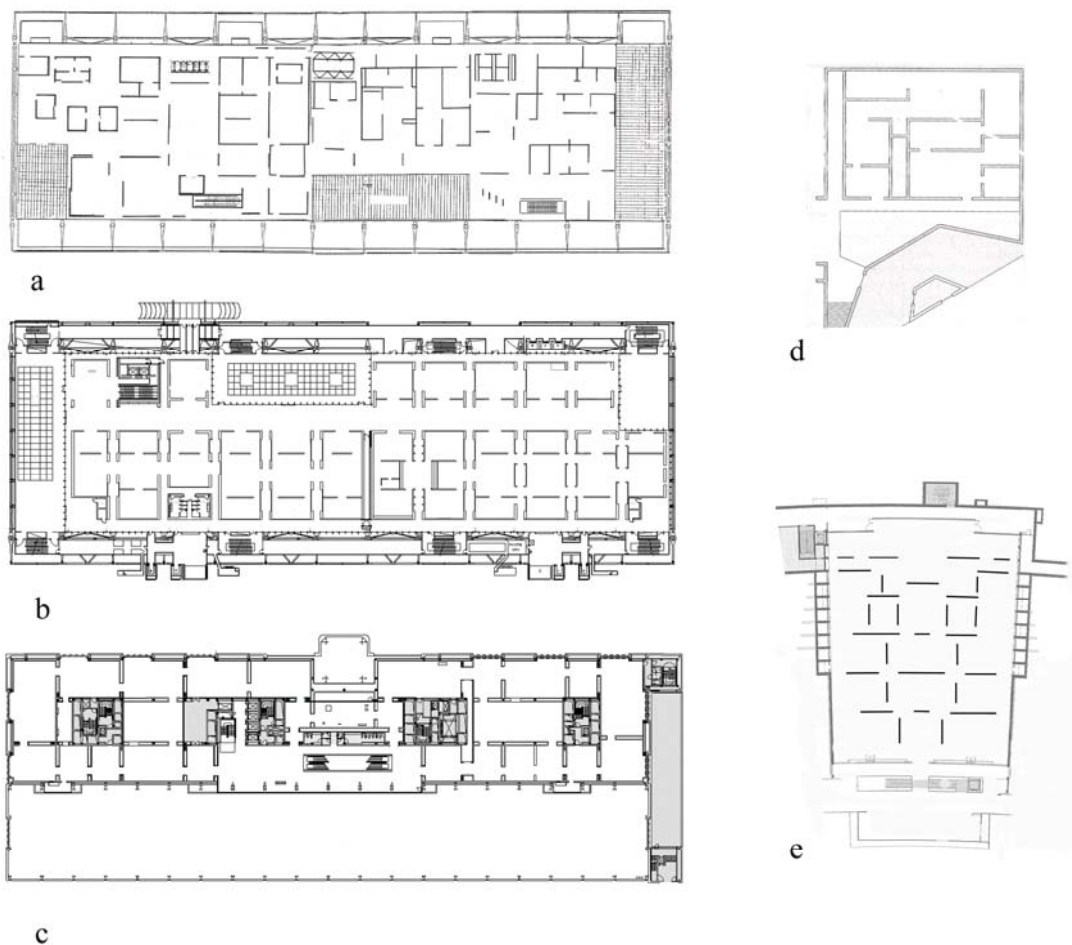

Figure 1
Views of Pompidou (a), Tate Modern (b), Zentrum Paul Klee (c) and Schaulager (d)

1. A brief view of the original layout of Pompidou

It is clear that in comparison to the newly designed Tate Modern, Pompidou is the complete opposite, with a long history and influential evolution that made it a landmark in the history of

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architecture in general and in museum design in particular. So before looking comparatively at the key structural properties of their current layouts, it is thought essential to consider the original layout of Pompidou, as the necessary background against which our analysis will be developed. Like the building, the original layout was characterized by flexibility -designed as an open plan articulated by movable panels, placed in clusters or dispersed in space. [Figure 2a, 7b] The intention of the first Director of the Museum, P.Hulten, was to create a spatial structure that resembles a city, with interlocking spaces, squares, paths and dead-ends. One wandered around in the museum like in a street complex; the arrangement of panels opened up long vistas, and allowed views into different sections of the display. Hulten (1974) explained the analogy between the spatial design and the city structure as follows:

'*Take for example the city.. it consists of squares, streets, dead-ends…one can move about, pause, start again. The museum that finds inspiration in the form of cities acknowledges the alternation of motivation, interest, and fatigue. It is a system of galleries; lofty spaces, intimate rooms that relate and alternate to each other. One should have the possibility of losing oneself …. The museum must offer visitors a loose thread to follow….*'
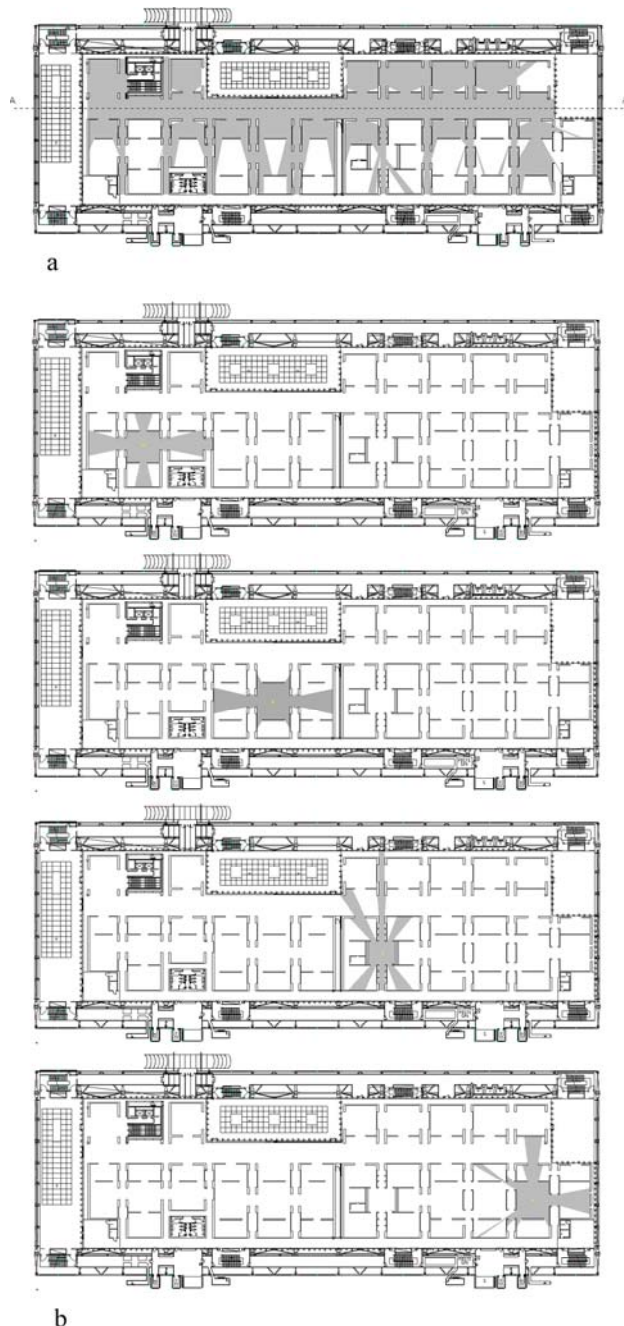

Figure 2
The layout of the exhibition spaces at Pompidou in 1977 (a) and in 2003 (b), Tate Modern (c), Zentrum Paul Klee (d) and Schaulager (e)

As it will be argued, this idea of the museum as continuous space and as a place one walks through was maintained in the re-design of the fifth floor of the museum in 1985 by G. Aulenti, although, at first sight, the new layout, highly ordered, seems the complete opposite of the original open plan.

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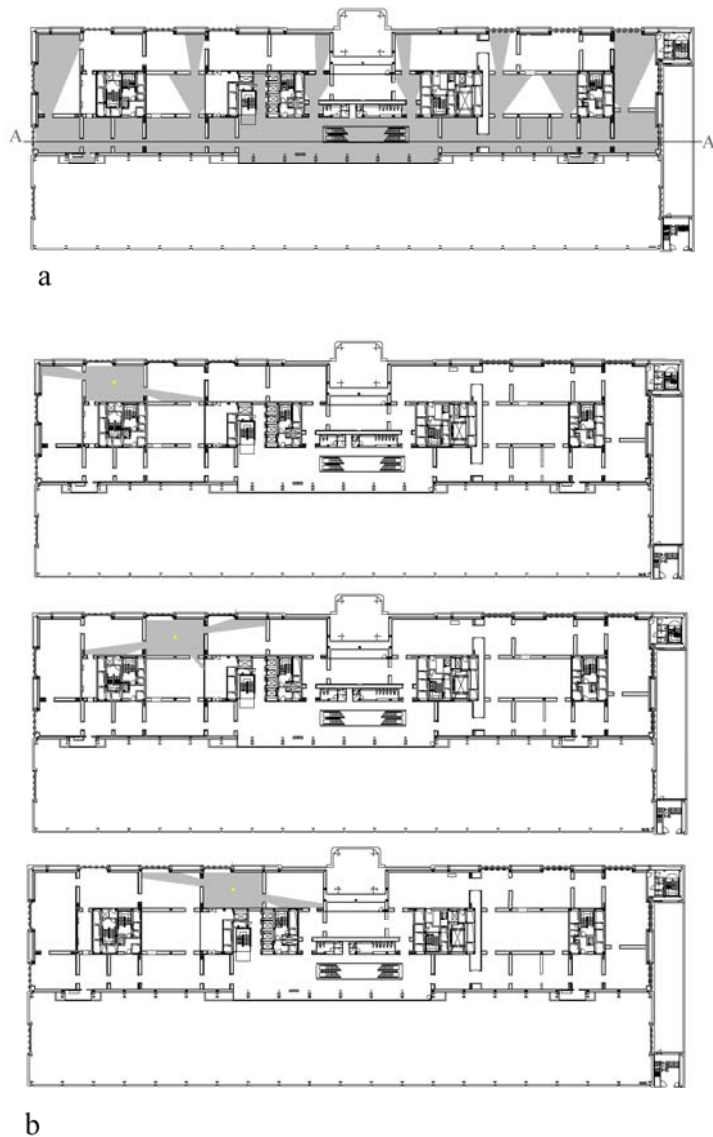
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2. Morphology of space

Looking at the layouts of Pompidou and Tate Modern, both rectilinear and of similar length (166m the Pompidou, and 155m the Tate), [Figure 2b-c] there is a comparable spatial style to be immediately observed: both exhibit geometrical order –their layout is articulated on a modular grid-, and display spatial order –they consist of more or less identical spaces (or sequences of spaces) arranged in similar spatial relations. In both cases the layout in based on a well-organized network of long axes of visibility and access that traverse the layout in its length and width, constantly giving clues about the global structure and responding to the key concern for clarity of plan. [Figure 5a-c] But, off the main axis, and as the viewer goes deeper in the gallery, shortened axes impose a different rhythm of progression, slowing down his physical rhythm and creating a 'process' of discovery.

Figure 3

(a) Line isovist drawn from the main axis of Pompidou and (b) isovists taken at central points of the galleries. Their juxtaposition makes clear the contrast between information stability offered by the former and informationally sharp changes created by the dense and multi-directional pattern of spatial connections between the latter.

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Figure 4
(a) Line isovist drawn from the main axis of Tate Modern that constantly gives clues about its global structure and (b) uniform and expansive visual fields from central points of the galleries that focus attention locally.

A key spatial property of both layouts is the tripartite structure. The layout of Pompidou is organized around the long axis often referred to as the '*grande avenue*', that gives access to the spatial units arranged on both sides. A clear internal order and a tripartite structure also characterize the complex of spaces on the right side of the axis, with the middle rooms structuring a second major, yet not continuous, axis. It is clear that we have to do with a highly hierarchical organization of space, which, we believe, can be seen as a means to create visitable units and allow different depths of exploration -from the simplest linear progression through the main axis to the selective viewing of the central spaces or the exhaustive exploration that includes the most segregated galleries.

Tate Modern also consists of three ranges of rectangular rooms of similar width. But here neither the symmetry nor the tripartite suite layout displayed in the plan, are allowed to appear as one moves about in space. Galleries are organized in the periphery of a central space that contains the vertical connections and can form either two rings of spaces or a continuous sequence. Setting out from the key idea that '*a large museum requires a simple plan* (Serota 1998, 14), Tate proposes, instead of the hierarchal structure of Pompidou, a counter statement of what we might

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think of as an egalitarian ideal (expressed by the strong sequencing and the availability of the four entry points). Thus, the galleries, opening off each other, are more or less equivalent, with the exception of the two middle spaces, which contribute to eliminating depth effects between different parts of the layout. This peripheral ordering of the galleries around the middle spaces could also be seen as the equivalent of the hierarchical structure at Pompidou, in that it allows the creation of manageable sequences.

Closely related to the axial organization of the layouts is their visibility structure that offers another valuable parallel between Pompidou and Tate Modern, which begins to suggest some critical differences between the two cases. The characteristic of the visual organization at Pompidou [Figure 3] is the dense and multi-directional pattern of connection which constructs constantly changing visual relations and offers overlapping planes. This, however, does not mean that space is immediately revealed to the viewer. Vistas systematically come up against the boundaries of the spatial units, producing *isovists* that may overlap with the previous or the next one, and thus creating an engaging recurrent tension between stability and redundancy on the one hand, and informationally sharp changes on the other. By offering a simultaneous perception of different spatial locations without allowing generous visibility across rooms, and hinting at spaces as destinations to be explored, the visual structure of Pompidou invites movement and exploration, and emphasizes a *dynamic* sense of space.

A tension between stability and change is also found at Tate, namely, between the long perspective vista though the south enfilade of rooms and the shorter views though the staggered north galleries. [Figure 4] But in contrast to the heterogeneous shapes of the penetrating views generated by the configuration of space at Pompidou, visual fields at Tate tend to be rather uniform and more expansive. Furthermore, Tate employs the reverse resource to the diagonal views of Pompidou: a smooth, successive exposure that consistently re-focuses attention locally, encourages concentration and generates a rather *static* impression, that reinforces the sense of travelling along a sequence of spaces.

3. Synchrony and description
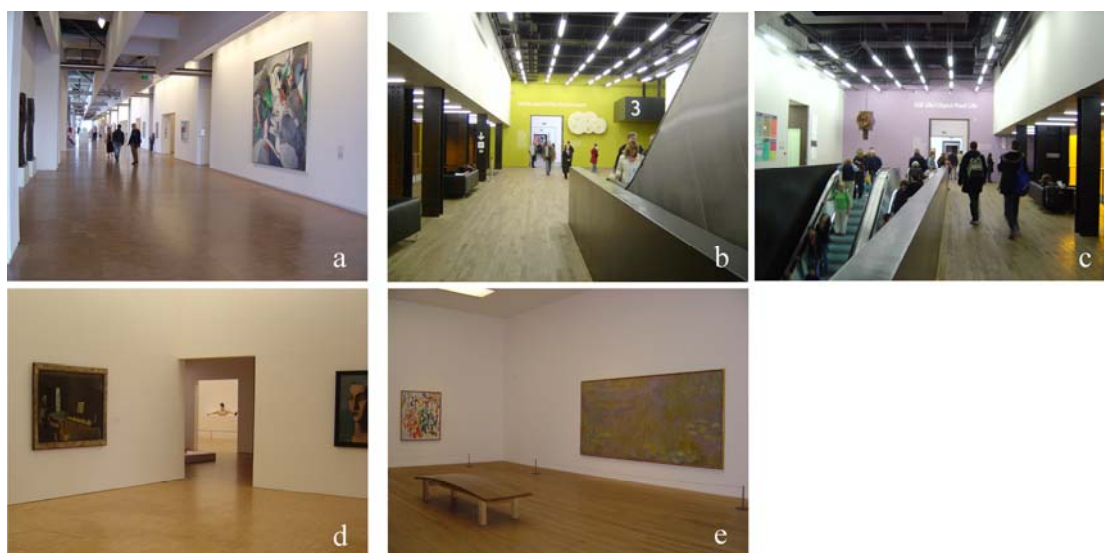
FIGURE 5

Long axes traversing the length of the building at Pompidou (a) and Tate Modern (b-c). Examples of axial disposition of rooms at Pompidou (d) and unexpected groupings of two garden paintings at Tate Modern: Monet's Water-Lilies and P.Heron's Azalea Garden: May 1959 (e)

What emerges from the analysis above is that the two museums have built their spatial design on similar organizing principles -such as the configurational regularity, the strong axis running the length of the building, the controlled visibility, and on common spatial themes –as for instance, the

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attention given to the global structure, the emphasis on spatial orientation, the preoccupation with the organization of manageable sequences. But what determines their spatial structure is the way they interpret the above principles and themes, and the manner in which their common elements are organized and linked to a global pattern. The main axes of the two layouts best illustrate this point. They both have more or less the same morphology and constitute the *integration core* of the gallery that extends the whole length of the plan, but they are embedded in different syntactic contexts. To best clarify this distinction we could use the syntactic concepts of *synchrony* and *description*, two concepts that allow us to distinguish between spaces that look similar but are embedded differently. *Synchrony* refers to the scale of a space and description, to the whole embedding of the space in its context. So we could say that the main axes at Pompidou and Tate Modern have identical *synchrony* –both increase *axial synchrony*- but *different descriptions,* that is, different syntactic embedding. The axis at Pompidou [Figure 5a] organizes the whole layout, assumes the role of the recurrent space in the sequence and acts as a perambulation space, as the obvious social gatherer. More fundamentally, by linking the sub-cycles on each side, it allows a certain degree of flexibility in respect to local choices and structures a prescriptive, yet open route, which, we believe, retains something of the labyrinthine route of the original open plan layout. In other words, the organization of circulation could be seen as an interpretation of the urban metaphor proposed by Hulten and the idea that the visitor should be able, while wandering around, to make choices, change direction and change his mind. Finally, the importance of the axis is further reinforced by the fact that the internal circulation path is not continuous -so visitors must return at various stages to the main axis to make transitions from one spatial unit to another-, and works as the only way back to the starting point. At Tate the main axis, partly structured by the south enfilade, is not an independent circulation space which one walks through, end-to-end. [Figure 5b-c] Moreover, unilaterally linked to the central range of rooms, it does not provide a structure to the exploration of the galleries nor does it become the recurrent space in the sequence. The situation at Tate is simpler. The layout reduces, if not eliminates, the tension between local and global, and much less input is required; once the viewer has selected the initial direction to go (west or east suite), he has essentially to follow the natural progression of spaces. Only the escalator space of Tate –part of the integration core- can be seen as assuming the practical function of a gathering space, and with 'views' onto the turbine hall, it provides a spatially differentiated experience. [Figure 8a-b] However, it is in effect engaged in a passive role: detached from the viewing sequence, it allows visitors to omit spaces; but, once they started their itinerary, it does not play any role in the organization of circulation.

4. Paths of exploration and patterns of co-presence

So the question that arises next is what are the implications to be drawn from the particular ways of organizing space for the visitor experience, as manifested in observable patterns of visiting in each museum? Tracking fifty people through the galleries at Pompidou during their whole visit showed that each followed a different path, taking advantage of the dense network of connections and exploring the variety of possible combinations –with half of people tracked skipping half of the galleries. However, behind the heterogeneity of visitors' itineraries, a clear pattern of movement can be identified, and more interestingly, a strong tendency for visitors to get to the 'pre-determined' key spaces that structure the main route. The higher rates –with the exception of the central axis where all the diverging paths necessarily converge- are found in the right complex, and more specifically, the central spaces which structure the first and the last part of the internal circulation path, while the spaces with low movement are consistently located at the end of the sequence or in the deepest spaces of the gallery that are visually segregated and not directly accessible from the main axis. This points to a movement pattern which seems to be a function of the spatial layout (with movement densities falling off with depth into the gallery). Moreover, the layout of Pompidou exploits movement to create dense encounter zones. As already argued, the main place for interaction is the central axis, designed to operate like a street, maintaining something of the original conception of the museum as a place to stroll, to look at works of art in a relaxed way. This is coupled with the internal structure of the galleries which favours the diffusion of movement and opportunities of interaction. But in comparison to the enforced pattern of movement created by the axis which constitutes a compulsory space in the layout, the pattern in the galleries is characterized by a higher degree of randomness and occurs in a more informal

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and unforced way. By implication, a critical distinction should also be made between the axis that synchronizes contacts between groups of visitors, encourages encounter density, makes interaction visible maximizing people's awareness, and off the axis, where visitors are less aware of each other and the encounters that occur are mainly between individuals rather than groups. To the differentiation in visitors' itineraries and the selective paths at Pompidou, Tate juxtaposes the exhaustive paths of visitors, a well-balanced visiting pattern and a high degree of uniformity, as crystallized in the homogeneity of the recorded routes and the uniformity of the movement pattern, all visitor patterns to be expected as a by-product effect of the sequencing of the layout. Since the route is virtually a natural progression from the entrance to the end of the sequence, it is unlikely that visitors will miss any room. In other words, we have to do with a layout that structures the search pattern, in an almost mechanical way. It could be argued that the organization of circulation at Tate exemplifies the exact opposite of Hulten's concept of the museum route, described as follows: '*One has just to traverse it. He is here. He arrives there. There is nothing else to do*'. Global variables do not seem to affect the pattern of movement since all spatial values are equal and so the differences between spaces will be just random variation. So, we find deeper spaces getting similar or sometimes higher movement than more shallow ones. By implication, the layout of Tate Modern, shallow and overly sequenced, does not allow for any variation in visitors' pattern of encounter: since people are using space more or less in the same way, they are also equally likely to be co-present. In other words, the interface between localised and non-localized movement is broken and patterns of changing natural co-presence in space are not achieved.

5. Spatial unfolding of art and morphology of viewing

Against this background, let us now turn to the morphology of display to see how the two museums relate their spatial design to the presentation of their collections. Are the morphological principles analyzed above used as a means to a particular curatorial intention, or do they constitute an end in itself? The display on the fifth floor of Pompidou [Figure 5a,d] is devoted to the period from the early twentieth century to 1960s, and its general organization follows the art historical scheme hanging by movements and artists, in a chronological framework, an organization that recalls Alfred Barr's famous diagram outlining the genealogy of modern art: it starts with *Fauvism* , ends with French and American *Abstraction*, while the emphasis is placed on the supremacy of *Cubism, Surrealism and Abstract Expressionism*. The ordered and compartmentalized layout suits the spatial unfolding of the narrative as an orderly series of movements and artists, but at the same time, by allowing the progression to be non-linear counteracts the inference that modern art evolved along a single path. The arrangement is neither prescriptive nor hermetic: the connection network seems to suggest that modern art is a composition of individual achievements, the product of the mutual influence between artists, movements and styles. It could therefore be argued that space is systematically used as a narrative device and mediates additional relationships between exhibits. Looking at a specific object at Pompidou, means discovering new relationships, perceiving simultaneously various surrounding visual realities that create a composite image, since the axial dispositions of rooms are consistently used to enrich the views of objects. The maze-like character of the spatial structure and the profusion of oblique views and changing vistas engage visitors both physically and intellectually: as the pattern of visual links is elaborate and not obvious upon first sight, the reading entails a process of exploration and discovery, inviting the viewer to shift positions and look around exploring relations, while contributing to the aesthetic experience of the museum in movement.

This argument begins to expose one of the determining features of Pompidou, the synergy between space and display. Over and above the content of the objects, the articulation of space and the hierarchy of subdivision convey meaning and serve a display that aims at emphasizing the turning points of the history of modern art. Key works which attract visitors' attention are hung in the most accessible spaces -in the galleries open onto the central circulation space or those structuring the continuous interior axis-, and placed in strategic locations, in relation to door openings, or on the axes of the viewer's passage, while the deepest and secluded spaces are devoted to monographic displays or parts of the collection of a more specialized interest. It seems not accidental that along the main axis, the walls are perforated to frame a pair of paintings by a

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single artist, key figure of the movement to which the display unit is devoted. [Figure 6] Interestingly, the empirical investigation reflects most clearly this key curatorial strategy and enhances our understanding by bringing into surface the synergy between conceptual structure and functioning. Let us explain this. It is observed that the highest rates of viewing are found in spaces that tend to have more movement than others, while at the same time show the key attractors of the display. It seems that the spatial layout and the exhibition set up work together to channel visitors' paths to predetermined key spaces and make some parts of the galleries more occupied than others. In other words, we have to do with the multiplier effect (Hillier 1996, 169) which comes from the exhibits on space: taking advantage of the through movement, curators place the key works in the most accessible spaces of the layout, which means attracting in turn more viewers, and rendering these spaces the most intensively used galleries of the layout. This suggests that the intention is didactic; yet it is coupled with a measure of personal exploration and self-discovery: the information is structured, but proposed as a profusion of ideas and cumulative impression; the route is pre-defined but the arrangement invites visitors to take different paths, as reflected in the surprising heterogeneity of their recorded paths.
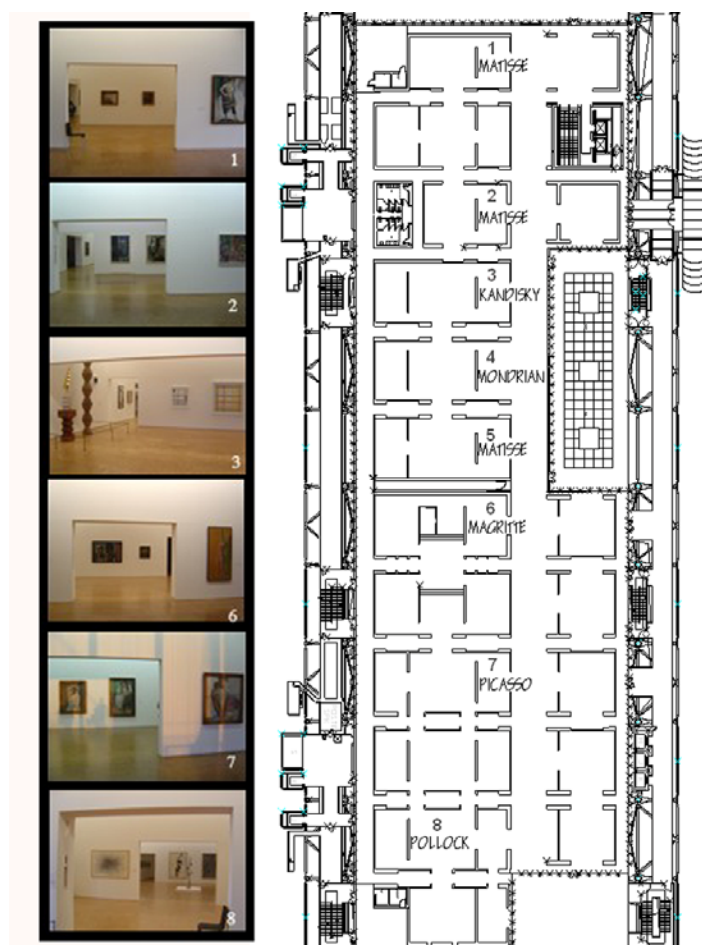
Figure 6
The arrangement of the collection along the main axis at Pompidou

Let us now turn to Tate Modern which, in contrast to the art-historical narrative of Pompidou, proposes an *ahistorical, conceptual*, arrangement: the collection is organized in four separate themes, that cut through the history [Figure 5b-c,e] with the aim to identify tendencies that transcend movements, and show continuities across time –an approach which obviously questions '*the widely accepted model for exhibiting the art of the twentieth century that is inspired by Alfred Barr's idea of a linear and evolutionary succession*' (Blazwick cited Birnbaum 2000, 40). So the display of each room tends to be self-contained: works are arranged for their similarity or for their contrast, and related by a conceptual theme. The overall message arises from the

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accumulation of the display units, loosely linked by a thematic thread, as illustrations of the pre-given concept. But the critical differentiating feature of Tate Modern is the high degree of autonomy that governs the relation between space and display. Not only there are no strong interdependencies between space and display decisions, but also key spatial principles, similar to those of Pompidou, which have an instrumental role in terms of organization of space, appear inert in respect to the exhibition set up. The powerful axiality, a key spatial property of the layout that contributes to the clarity of the plan, does not appear to enhance the impact of objects or add to the narrative. Major lines do not end by striking objects, but tend to be end-stopped by blank walls or dark spaces, and dialogues between individual works, opportunities for contrasts or links, tend to be restricted within the single gallery and are immediately revealed to the viewer. The technique of vistas and overlapping visual fields is also rejected as a consistent organizing principle of the display and works are presented in spacious arrangements rather than an elaborate pattern of visual links. But then how can we interpret the relation between linear progression and non-linear view of art? Information is not arranged in sequence, yet the sequence is largely dictated by the layout , implying a sense of consequence, completely absent from the anti-narrative structure of the display. There is, however, one linking point between the two layers of organization, and that is the high originality of the display message, which seems to be supported by the restrictive function of space. In other words, the spatial structure is required to ensure that the proposed links between works are read as planned: displays are kept apart, visual connections between galleries restricted, and space, not allowed to add new relations between works. Unsurprisingly, these exhibition properties -the self-contained displays, the controlled visual fields, the lack of visual continuities across spaces- seem to encourage concentration, as reflected in the attention of visitors to the exhibits. Moreover, in general, and in contrast to Pompidou, where viewing patterns are closely linked to movement, at Tate spaces with high viewing are not necessarily those that get high movement (though mean viewing is almost identical to mean movement), since the layout is so coercive and, as we have seen, evens out the effects of space on movement. There is therefore strong indication that viewing tends to be more closely related to the special attraction of exhibits and much less affected by spatial properties.

6. Visiting culture

This seems to be the key characteristic of Tate: the emphasis is placed on evening out differences and on equalizing the accessibility of galleries, the significance accorded to the works displayed, and most importantly, the densities of space use. It could therefore be argued that Tate works as planned, '*as a machine for showing works*' (Serota cited Tate Gallery Archive 1995, 32). The layout is used to *present*, to allow a direct appreciation of works of art. Works are arranged so that the conceptual logic of the display is overlaid on the layout independently of its structure. Moreover, Tate minimizes the effort and the energy needed for exploring galleries: visitors wander through the galleries without thinking of choices; they have to follow the succession of rooms and focus their attention on what they see, on the intellectual content of the display. And, although a sense of surprise emerges from the unexpected groupings of works, the links between them are already set up, which also suggests that less intellectual effort is required by the viewer and a high degree of control is given over to the curator. This points to a didactic intention, not immediately discerned behind the atypical arrangement of the collection that rejects established narratives and hierarchies of value, subverts chronological and narrative principles.

Conversely at Pompidou, the effort is directed towards resolving spatial tensions -between the open central space and the enclosed galleries, the clarity of the former and the complicated and elaborated spatial design of the latter, the integrated and the segregated rooms, the localised movement in the galleries and the globalised, along the axis, the need to guide visitors' paths and the intention to engage them to exploration, the didacticism and the personal learning experience, the museum visit as a shared experience and the more private exploration of the galleries - as much as display tensions –as, for instance, between the central displays showing groups of artists and the monographic ones presenting individual artists. Rather than contrasting with the global structure, the intended spatial unfolding of art, is served by the layout, maximizing its potentialities, such as prominent locations at the culmination of viewing axes, so as to *re-present* a specific view of art, to acquire a symbolic function and become a visible display of the underlying conceptual scheme.

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It follows from all our previous analysis that, though in both cases space does not constitute an integral part of the display, Tate differs from Pompidou in that the spatial properties are seen as functional ends in themselves, and the sense of discovery is transposed from space to the reading of works, rendering the exploration intellectual rather than spatial or visual. At Pompidou, the opposite happens. The spatial properties are thought of as spatial means to express the intended message and contribute to the perceptual organization of the gallery. Thus, by being closely interlinked with the exhibition set up, the key qualities of the spatial design of Pompidou - sequences, core, axes and views- acquire an enhanced importance and become part of the visual aesthetic and the whole experience.

The conclusion as a new beginning

By way of conclusion, and rather than referring back to the arguments already developed, we propose looking ahead, to two recent museum designs of the architects of Pompidou and Tate Modern, the *Zentrum Paul Klee* in Bern (2005) and the *Schaulager* (2003) in Basel respectively, [Figure 1c-d,2d-e] with the belief that their pairing with their two previous museum projects brings to surface intriguing similarities that enhance our understanding of the architects' design decisions, enrich our analysis of strategic differences between two contrasting visiting cultures, and take us a step further by opening new questions. The *Zentrum Paul Klee* was designed by Piano as a cultural centre, mainly organized around the museum that accommodates a large collection of works of Paul Klee, while the *Schaulager* was created by Herzog and de Meuron with a quite distinctive and original intention: to work partly –rather, mainly- as the depot of a private collection, and partly as an exhibition space.

Despite the obvious fundamental differences between the two projects of Piano, in terns of programmatic requirements and design intentions, there are some intriguing threads that link them together, so that we would venture to say that the layout of the exhibition spaces in the*Zentrum Paul Klee* can be seen as reminiscent of the original plan of Pompidou [Figure 7]: the open space is organized with movable panels arranged in a grid, offering a richness of visual connections and variability in visibility relations; its design encourages a global rhythm of perception, distracts attention away from the space one is standing, and places the emphasis on the dynamic dimension of space; moreover, the circulation is organized as an open route, that structures a nonlinear rather than sequential exploration and randomizes both patterns of movement and reading of works, while sustaining a dense pattern of encounter between visitors and enhancing co-awareness.
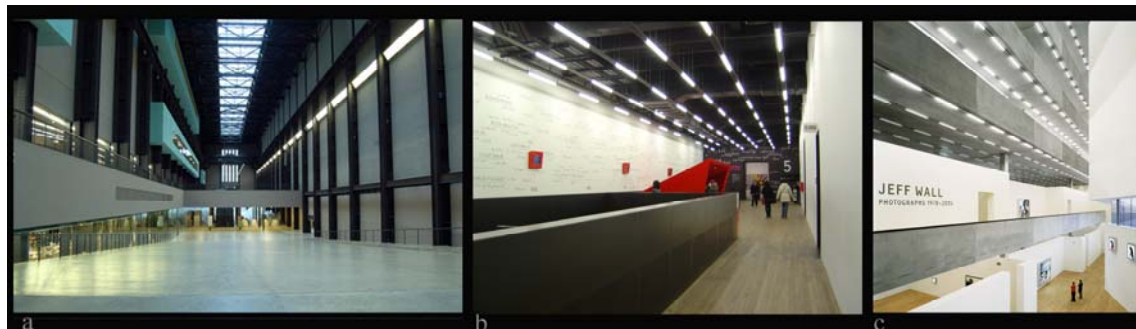

FIGURE 7
Installation view of the collection at the Zentrum Paul Klee (a) and Pompidou in 1977 (b)

Respectively, the design of *Schaulager* comes to further illustrate ideas generated by the analysis of Tate, and mostly, the sense that the spatial experience is found outside the exhibition spaces, and tends to be related to the global scale of the museum. To this contributes the creation of an

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impressive central space that extends the whole height of the building, exposing its internal structure, but, intriguingly, has no functional role in terms of organization of circulation or spatial orientation. [Figure 8] This brings us to an additional spatial aspect in which Schaulager can be usefully compared to Tate Modern: the *static* conception of space privileged in the galleries as opposed to the spatial experience created in the central space where 'architecture puts itself on display' (Ursprung, 2002,177). The architects seem to engage once again with the theme of articulated spaces that stimulate contemplation through the restricted visual fields rather than the richness of visual links, and opt for a well defined route that dictates a particular pattern of

Figure 8

Views of the Turbine Hall (a) and the escalator space on the fifth floor (b) at Tate Modern, and the central space at Schaulager (c)

exploration and experience of both objects and other people. These observations, though they might appear coming from intuition in the sense that they are made in the limited context of the above museums, seem to point to two different ways of organizing museum space and shaping its experience. We believe that the above discussion of insights invites further development and can act as a point of departure of a search of a coherent *spatial style* in the museum projects of the above architects, a style that derives from the manipulation of space rather than the physical form of the building. If the analysis in the first part of this paper suggested that museum space can be seen as a set of *generic themes* -the organization of spaces in a *visitable sequence* and the gathering space, the recurrent space in the sequence-, which are given as possibilities to be explored, each with its own affects and consequences, then the question that the last part raises is: do museums, over and above the programmatic requirements, have some common ground which is related to the way the individual architect organizes the building and handles spatial or display considerations? Can we recognize similar spatial means in the range of alternative design solutions proposed by the same architect within the same field? The discussion shifts thus the focus of attention from the question of *architectural necessity* to that of spatial aesthetic (Hillier, 1996, 438-441), from the general spatial model to the idiosyncratic spatial character of a museum -expressed here by the city/machine contrast-, but the aim of inquiry remains the same: to enhance our sense of morphological possibility and contribute to the knowledge-base of museum design.

NOTES

[i] It should be noted that though the analysis of the fifth floor of Pompidou and the third of Tate Modern is based on the arrangement of space as recorded in June–September 2003, the underlying organizing principles and spatial themes discussed here still remain the same.

[ii] Distinction due to J.Peponis. See Hillier and Hanson 1984, 93; Hillier 1996, 232.

[iii] In other words, it creates a structure that resembles that of the urban grid; many spaces can work as both starting points and points of aim that are diffused in the layout.

[iv] The new display (2006), which followed the inaugural hang (2000-2005) analysed here, also adopts a non sequential narrative, and proposes, in each of the four wings, dialogues between past and present that are organized around a central display that focuses on a familiar movement of the history of twentieth-century art. Galleries form a continuous sequence around

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the central space, which entails backtracking, as the system of multiple entry points is now eliminated.

v More specifically, the Schaulager, devoted to contemporary art, is conceived as a warehouse where the works of the collection of the Emanuel Hoffmann Foundation are permanently installed and displayed (on the three upper floors) and are accessible to researchers. The lower two floors accommodate two permanent installations and the temporary exhibitions organized annually, with the aim to present to the public part of the collection.

vi The social function seems to be a consistent preoccupation in his work, expressed in the large scale of the museums spatial structure –i.e. the main axis that runs the length of the *Zentrum Paul Klee* and the *Fondation Beyeler* (Basel, 1997), assumes key functions, and works as a gathering space- as well as in the transparency of the museum buildings themselves. For a discussion of the general theoretical model of the basic dimensions of spatial variability in museums, see Hillier and Tzortzi, 2006.

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