



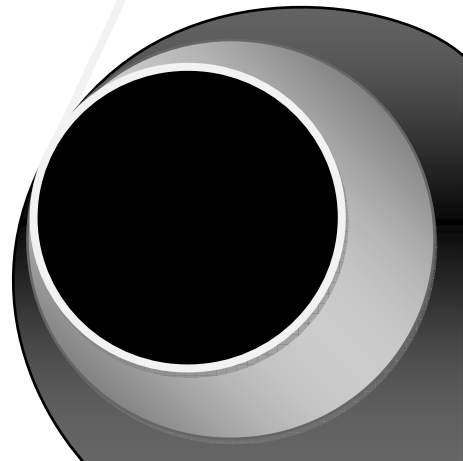
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AIMS AND SCOPE

The *HELLENIC OPEN BUSINESS ADMINISTRATION Journal* is published two times a year and focuses on applied and theoretical research in business Administration and economics.

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The journal was established in 2014 following the completion of the HELLENIC OPEN BUSINESS ADMINISTRATION International Conference.

The *HELLENIC OPEN BUSINESS ADMINISTRATION Journal* (The HOBA Journal) is published two times a year, in January and July. These two issues constitute one volume. One or more issues may focus on a specific topic of wider interest and significance, which is announced through relevant call for papers.

The editorial process at The HOBA Journal is a cooperative enterprise. Articles received are distributed to the Editor for a decision with respect to publication. All articles are first reviewed to be judged suitable for this journal. The Editor arranges for refereeing and accepts and rejects papers or, alternatively, forwards the papers to a member of the Board of Editors. The member of the Board of Editors, then, arranges for refereeing and accepts or rejects papers in an entirely decentralized process. In any case, each submission is sent to two referees for blind peer review and the final decision is based on the recommendations of the referees. The referees are academic specialists in the article's field of coverage; members of the Board of Editors and/or members of the Editorial Advisory Board may act as referees in this process. Only when a paper is accepted for publication it is sent again to the Editor. Subsequently, the Editor sends the finally accepted paper to The HOBA Journal office for final editing and typesetting.

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The above outlined co-editing process has major advantages. First, it is helpful in the assignment of referees and in the decision whether to publish a submission. Second, it avoids the apparent conflict of interest that results when an Editor handles a colleague's article. As a general rule the Editor and the members of the Board of Editors never assign papers written by authors at the same institution.

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Volume 2 - 2016, No 1

THE MUSEUM VISITOR AS CONSUMER

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Abstract

This paper takes as its starting point the idea that in museums the consumers are the visitors, and that, with the growing prevalence of the marketing approach and greater competition for audience, it is increasingly significant for museums to understand visitors' reactions to the exhibitions they offer. There has been a long debate as to how to organize exhibitions, but there is no standard method for assessing their effectiveness, though a variety of evaluative techniques have been applied, from interviews and questionnaires through to observation of behaviour. Here we argue that important keys to visitors' reactions are reflected in observable and quantifiable aspects of their behaviours, including the precise ways in which they move through the exhibition spaces and view exhibits. The key innovation of the research lies in relating these quantifiable patterns to museum *intent*, meaning how architects and curators seek to shape visitor experience and understanding through spatial design and display narrative. In this paper, we take four case studies of museums with different exhibition concepts and layouts, and show that empirical evidence of different patterns of movement and viewing can lead to deeper understanding of visitors' responses, and allow more informed choices in designing consumer-centred museums.

Keywords: museum intent; visitor as consumer; exhibition design; spatial layout; display narrative; visitor behaviour

JEL Classification: Z180

Introduction: the marketing approach and understanding the visitor

Initially seen as forced on museums by the need to diversify their sources of income as government support declined, the ‘marketing approach’ has increasingly come to be seen as means to further and realize the broader social goals of the museum in terms of ‘the needs of its visitors and the communities it seeks to serve’ (Sandell and Janes 2007: 292). From being identified simply as a set of commercial techniques to sell what the museum offered, and so increase income, marketing has become more and more regarded as an approach that can shape and guide the museum organization as a whole, and play a key role in its strategy and planning (Sandell and Janes 2007), not least by creating and maintaining relations with museum audiences (McLean 1997).

Against this background, museum visitors can be seen as a consumers in the positive sense that it becomes increasingly significant for museums to understand their reactions to the exhibitions they offer, and for this to be a factor in future exhibition planning and design. However, there is no standard method for assessing the effectiveness of exhibitions, though a variety of evaluative techniques have been applied, from interviews and questionnaires through to observation of behavior (see below). Here we argue that important keys to visitors’ reactions are reflected in observable and quantifiable aspects of their behaviours, including the precise ways in which they move through the exhibition spaces and view exhibits, provided we relate this clearly to museum *intent* in terms of spatial layout (how galleries are arranged in space and related to each other) and display arrangements (how objects are organized both conceptually and spatially). Relating museum intent to visitors reactions will allow us to illuminate and contrast some of the types of museum-going experiences proposed by Kotler and Kotler (2007: 322), including, ‘visual, sensory, and aesthetic experience; recreational, sociable, and learning experiences; and the experiences of celebration and enchantment’.

The empirical aspects of the study based on detailed observation of visitor patterns of movement and viewing (see ‘Methodology’ below) in four museum settings, made up of two contrasting pairs of museums, which we will analyze comparatively. The first pair consists of the Sainsbury Wing, London, and the Castelvecchio Museum, Verona, two museums that follow an opposite approach to relating architectural design to exhibition layout, and so to creating contrasting *visual* and *aesthetic* experiences for the visitor. The second pair consists of two large scale national museums, the Pompidou Centre, Paris, and Tate Modern, London, which through their spatial and display strategies lead to

two diametrically different ways visitors become aware of the objects and of other people, and so two different *learning* and *social* experiences.

At a more practical level, we focus on visitor experience from the point of view of a number of questions that relate to the way visitors move in the museum, explore the exhibition space and read the displays: are visitors' paths exhaustive or selective? Are viewing patterns closely linked to movement? Do visitors concentrate their viewing on individual objects or do they also appear attentive to overall arrangements? How long do visitors spend in exhibitions taking into account their size? And, more generally, does visitor behaviour vary with the individual visitor? Or is the layout of spaces and objects a critical factor in creating common patterns? Following a brief overview of visitor behaviour studies, and an introduction to the methodology of the case studies, the four museums are then explored by direct observation, in each case focusing first on museum intent as evidenced by the organisation of spaces and objects, and then on how this relates to visitors' observed patterns of moving and viewing.

Visitor behaviour studies - A brief overview

In recent years, the study of visitor behaviour has increasingly come to be seen as critical to understanding the functioning of museums and exhibitions. It has been addressed in a number of contexts. 'Tracking and timing' studies, which record traces of visitor movement and activity, were initiated in the early twentieth century, and have become a key element in feedback studies on museum performance, often using new technologies (for example, Moussouri and Roussos 2013), with a view to improving design (reviewed in Yalowitz and Bronnenkant 2009), or assessing the educational effectiveness of exhibitions (for example, Serrell 1998), or understanding the characteristics that make exhibits attractive – or unattractive – to visitors (Monti and Keene 2013). Efforts have also been directed towards identifying general principles underlying movement in museums – for example, the tendency for visitors to turn right at choice points (and walk on the right side of pathways), or to move linearly, or to follow the main path with one-sided viewing within spaces (see, for example, reviews in Dean 1994; Bitgood 2006). Bitgood in his review suggests a 'general value principle', meaning the value which exhibits represent to a visitor, set against the cost of accessing them, and argues that this can also help to explain other characteristic behaviours of visitors, which are seen as expressions of the 'economy of movement'. Circulation patterns have also been related to styles of moving through gallery space (see, for example, Hein 1998), often described using metaphors, such as ant, butterfly, fish, and grasshopper,

in the case of the study of a natural history museum by Veron and Levasseur (1983).

Methodology

The four museums that are used as case studies in this paper were displays of permanent collections. Spatial layouts were studied using graph techniques, in which spaces are represented as circles and the connections between them as links (Hillier, Hanson and Peponis 1984), to better understand spatial configuration, and this then formed the basis for studying the layout of exhibits. Interviews were also conducted with the architects and curators involved, and the museum archives examined, to clarify museum intent. Visitor behaviour was analysed using common techniques (see review of studies above). First, the paths of an average of 53 randomly selected visitors per museum were recorded for their whole visit to the gallery spaces. These traces permitted the construction of 'directional splits' showing the choices that were made at critical choice points in the layout, and this was supported by 'snapshots' of all individual spaces, recording *movement* and *viewing rates* for each space on a common basis.

Museum	SW	CV	PO	TM
Total display area (m ²)	1633	2200	4977	3416
No of visitors tracked	100	33	39	39
Tracking score	68	87	58	81
Mean movement rate	15.4	-	3.4	6.0
Mean movement/area	.0094	-	.0007	.0017
Mean viewing rate	12.6	-	2.2	5.9
Mean viewing/area	.0077	-	.0004	.0017
Viewing/movement ratio	.82	-	.65	.98
SumStops/area ratio	1.94	2.95	.82	1.1
SumStops/SumObjects ratio	14.4	21.7	8.3	18.5
Mean time spent (<i>minutes</i>)	16	50	37	28
Ratio time spent/area	.59	1.38	.45	.49
Maximum time spent	80	85	111	78
Minimum time spent	2	5	9	5
<i>Object-driven</i> visitors	50%	62%	62.2%	62%
<i>Space-driven</i> visitors	38.2%	38%	10.8 %	7.0%
<i>Eclectic</i> visitors	11.8%	0%	27%	31%

Table 1 Basic numerical data for the four museums. The missing data on Castelvecchio is because numbers in spaces were not large enough to make counting meaningful.

By studying the morphology of visitors' paths and mapping the precise location and distribution of their stopping points, we came to distinguish¹ visitors who tend to focus attention on individual works, move at the periphery of the rooms and stand close to individual exhibits, who we called *object-driven* visitors, from those whose attention seems drawn by group compositions and configurations in space, as indicated by the fact that they traverse the middle of rooms and tend to stand in locations that allow a wider view of space or groups of objects, who we defined as *space-driven* visitors. Looking closely at the quantitative profile of *space-driven* visitors in each museum setting (that is, comparing the *mean time spent* and the *mean number of stops* made by this kind of visitors, with the *total average time spent* and *number of stops*), allowed us to propose an additional sub-type within this type: visitors who we have come to call *browsers*,² since they tend to scan space and browse objects on display while moving in the middle of spaces. We also proposed a third type, the *eclectic* visitor, who appears not to examine everything but to select which

exhibits to view, and, as a consequence, stop more frequently at certain rooms and less at others.

Table 1 presents basic numerical data on the four museums.

Case studies

Sainsbury Wing and the Castelvecchio: shaping the visual and the aesthetic experience of the visitor

We will begin by comparing Sainsbury Wing and the Castelvecchio, two museums that constitute interesting cases, since the architecture of the building and the display set up were developed together and so are closely interrelated. The Sainsbury Wing (Figure 1) was designed by Venturi, Rausch and Scott Braun, in 1986-91, as an extension to the main building of the National Gallery specifically to accommodate the Early Renaissance collection, comprising mostly Northern and Italian works, from 1260 to 1510. The Castelvecchio (Figure 1) is not a purpose built museum, but a conversion of a complex of historic buildings dating from different periods, redesigned by Carlo Scarpa in 1958-74. More precisely, the museum occupies a medieval military castle, by the river Adige, on the edge of Verona. It consists mainly of the Reggia wing, the original residential building, built in the fourteenth century, and the Napoleonic wing, an L-shaped block of barracks added on the north and east side of the main courtyard, in the nineteenth century, during Napoleon's occupation of Verona, and is developed in four sequences, each on different level, organized 'as a continuously unfolding promenade' (Frampton 1995: 321). Scarpa was also responsible for the reorganization of the display (a local collection consisting mainly of Veronese sculptures and paintings from the twelfth to the eighteenth centuries), which was inaugurated in December 1964, and since then has remained fixed, as set up by the architect.

We will begin the analysis of the museums by looking comparatively at the spatial qualities of the two layouts, a common feature of which are the long axes. In particular in the Sainsbury Wing, powerful axiality is the key structural property of the layout. The whole structure is created by two intersecting major axes: a cross perspective axis, which is a continuation of the central axis of the main building, and penetrates the whole width of the extension, and a vertical axis which crosses the central enfilade of rooms and runs the whole length of the extension. In the Castelvecchio Museum, one finds again that major axes are a recurrent theme in each spatial sequence, but the accentuated axial layout is counterbalanced by a succession of oblique elements, bridges, passageways

and staircases, which are inserted at the nodal points of the layout, and mediate between levels, and so seem both to unify the complex and provide pauses.

Closely connected to the issue of axuality, perspective is used in very deliberate ways in both galleries. For example, in the Sainsbury Wing, the cross axis which links the two buildings creates a false perspective, through the arched openings diminishing in size, and a visual play with the perspective of the large altarpiece at the end of the vista, Cima's *Incredulity of Saint Thomas*. At Castelvecchio, Scarpa also uses perspective and, intriguingly, handles different kinds of perspective within the same spatial sequence, through the two parallel axes of movement in the painting galleries. Both perspective vistas are at one end stopped by a blank wall and at the other by an outside space.

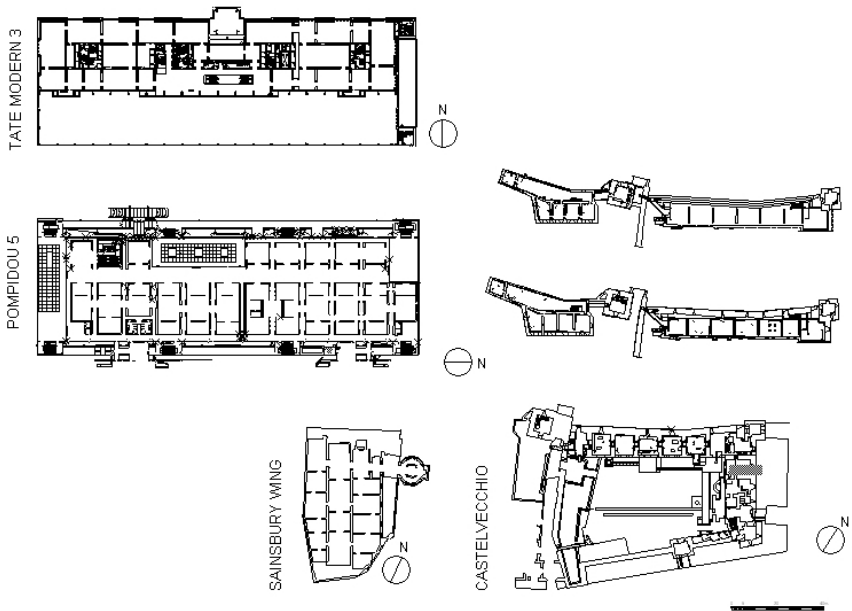


Figure 1 The plans of the four museums to scale.

A dominant spatial feature of the Sainsbury Wing is hierarchy, expressed both by the structure of space and the size of rooms. The sixteen galleries which

constitute the Wing are organised in three ranges of rooms – a structure that recalls the layout of a tripartite church, a symbolism which perhaps emphasizes the religious character of the works displayed. This ‘basilica’ style layout enhances the predominance of the central sequence, made up of the axially aligned longest and highest spaces of the gallery, and planned to play the role of ‘a public processional space’ (NGA HS1.39). Although the design takes the form of conventional rooms, the open spatial relationships of the rooms create a sense of unity and flow, and the kind of succession of visual relationships which is usually characteristic of open plan layouts. The majority of visual fields are not restricted to the local scale of a single space, but enter up to six rooms. Also, as the visitor moves along the two key, intersecting axes of the layout, he or she acquires visual information that reaches the periphery of the plan. Like the Sainsbury Wing, Castelvechio is characterized by distant visibility, but, unlike it, it is marked by visual fields which are quite restricted and views which seem to be ‘informationally stable’ (Peponis 1997) in the sense that they do not change as the visitor moves along the axis. In general, the rule that seems to direct the organisation of space is the control of visibility. Possible expansive visual fields are consistently restricted by objects laid out so as to maintain a sense of uncertainty.

Turning to the display layout, in the Sainsbury Wing, paintings, chronologically ordered and grouped by artist or school, are displayed in a grid layout, so that ‘moving straight on means a move forward in time’, and ‘a move to the side means a move to a different geographical region at roughly the same time’ (NGA 16/115.8). But the powerful axially, the open spatial relationships and the synchronic visibility become spatial tools that allow for the flexible expression of thematic or aesthetic relationships between works, while paintings with great visual strength, perspective and centrality of composition, are placed in strategic positions, either at the end of long lines of sight or in the deepest spaces, and are used as ‘attractors’. There is a certain spatial mannerism that aims to create a visual effect and thus induce movement, to ‘draw people through and persuade them to linger (in the deepest spaces) rather than rushing through’ (NGA HS1.39).

At Castelvechio the collection is broadly arranged chronologically but the emphasis is placed on the creation of local visual compositions. In contrast to the Sainsbury Wing, at Castelvechio objects are not placed axially, but off-centre; in particular, they are not positioned at the end of long lines of sight, but on the sides of the main axes. This is best illustrated by the arrangement of statues in the sculpture galleries. The figurative sculptures, carefully positioned along the central perspectival axis, on thin pedestals that mediate between them and the floor, in an asymmetric arrangement and in varying depths, seem like

human figures stepping out into the axis, creating a sense of continuity through spaces. Visual connections are also created between paintings, which are treated as three-dimensional objects, either off-set from the walls, or suspended from the ceiling, or mounted on free-standing easels, systematically arranged in relation to the viewer's field of vision as he enters or leaves the room. But the distinctive feature of Castelvechio is that it discourages a static point of view. Curiously, the viewer comes up to the objects from behind, an atypical arrangement that requires him to move around and among them, in order to face their front and capture the sense of the whole. 'I could have turned them...', says Scarpa, 'but it seems that this is the visitor's duty... to look to right and left... come back to see it again, and walk around it' (cited Olsberg 1999: 14).

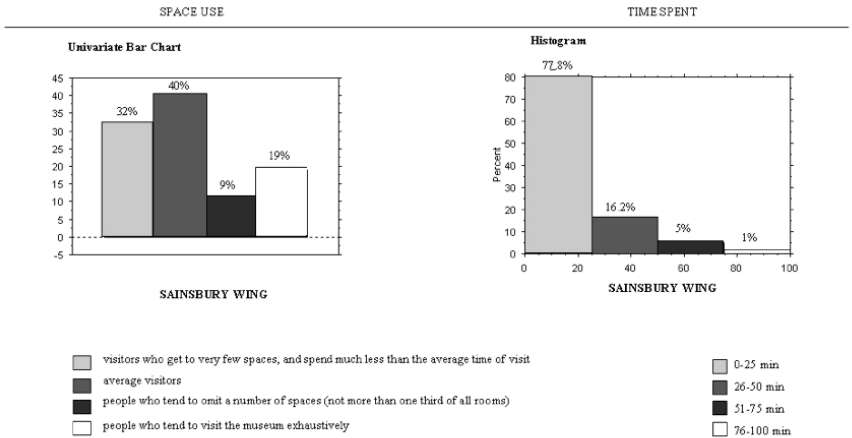


Figure 2 Diagrams showing the use of space and the length of *time spent* by visitors observed in the Sainsbury Wing.

So how do these explicit design choices relate to the actual functioning of the two museums? Before focusing on the analysis of the morphology of visitors' exploration, it is of interest to note that the average *time spent* in the Sainsbury Wing is 16 minutes. This can be accounted by the fact that, apart from a considerable number of people who visit the museum exhaustively and pause to view many exhibits, there is an even higher number of visitors who tend to omit spaces (up to one third of the total), and spent much less time than

the average (Figure 2). In terms of the analysis of movement, people enter the gallery from the north-east corner, and then either turn left (45%) and move through the rooms of the east side, following the alignment proposed by the museum, or continue straight, towards the end of the perspective axis (50%) and, by-passing the central ‘processional’ axis, turn down the west axis, continuing to the last room of the sequence. Up to that point people move in a systematic way. Their difficulty lies in deciding the continuation of their itinerary when they find themselves at the south end of the east or west axis. Because of a simple flaw in the layout, there is no way in which the visitor can find a route through the galleries without at some stage taking a ‘wrong’ direction, and having eventually to retrace steps, or to miss out parts of the gallery, usually the central sequence. This can be clearly seen in the simple graph of the layout (Figure 3a).

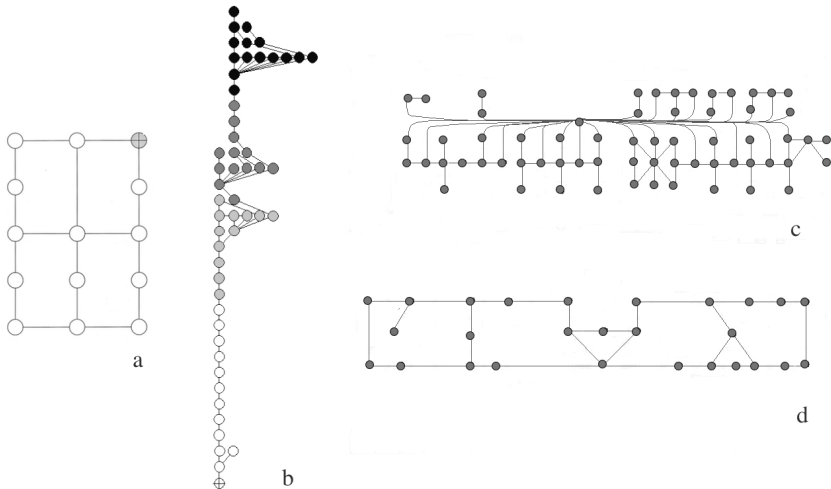


Figure 3 The graph of layout of: (a) the Sainsbury Wing, (b) Castelvecchio, (c) Pompidou, and (d) Tate Modern. The graph of Castelvecchio is *justified* in that it shows the visitor route from bottom to top rather than the actual layout.

However, as we have seen, function seems not to be the main concern of the layout. In the Sainsbury Wing, the organization of space has a strong intellectual intention – it works as a text to be read, not simply as an organizer

of movement. In terms of movement, the Sainsbury Wing is not an easily traversable gallery. This may account for the fact that despite its small scale, visitors move selectively and get to only 68% of spaces in the gallery (see *Tracking score* in Table 1); and more intriguingly, though the grid layout does not predetermine visitors' paths, a significant number of visitors (19%) follow exactly the same route. At the same time the Sainsbury Wing has high *rates of viewing* (as reflected in the *ratio of viewing to movement*) and number of stops (as indicated by the *ratio of number of stops over floor area*). The morphology of visitors' paths (Figure 4a) and the locations of where they pause – mainly close to the perimeter of rooms – shows that 50% are *object-driven*, and 11.8% *eclectic*, that is, people who stay longer and seem to look more attentively at certain spaces and move rapidly through others, usually the central ones. This leaves a considerable number of visitors observed, 38%, who are *space-driven*. If this type of visitors is considered in more detail, we find that the duration of their stay is by 20% lower than the average; and this finding in conjunction with the observation that the distribution of their – fewer than the average – stops are in the middle of spaces, may suggest that we have to do, to a large extent, with *browsers* who scan space and get an overall picture of the display – a pattern which observation suggests may relate to the ample cross-visibility of the layout.

Turning to Castelvecchio, if we represent the museum layout as a *justified graph* (Figure 3b), we find that it has a 'deep tree' form, that structures a unidirectional global pattern of movement, as inevitably reflected in visitors' paths. But what is of particular interest at Castelvecchio is that the sequential movement shaped by the global layout is coupled with highly non-linear movement locally. If we look closely at the morphology of the traces of individual visitors (Figure 4b), we find that the rate of *changes in direction* as people explore the displays is at Castelvecchio twice as frequent as in the Sainsbury Wing. A similar ratio is found when we compare the two museums with respect to the average *number of intersections*, that is, the number of times each visitor 'crosses' his own path by going from one point to another within a room. These findings show that the simplicity of the global path is countered by the complexity of the local. Visitors tend to walk around and among the objects, shaping intersecting and encircling orbits of movement that are not kept to the perimeter of the rooms but, on the contrary, fill the space, since they are required to shift positions and viewpoints to build up a picture of the whole.

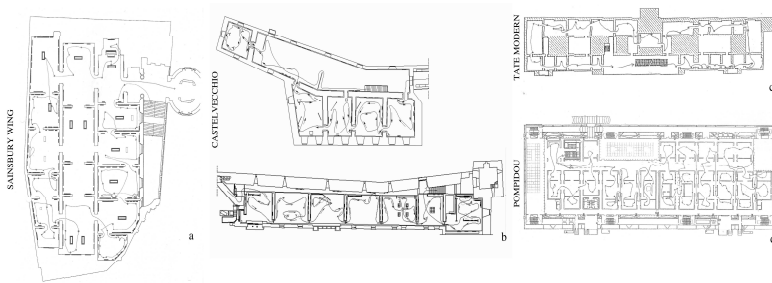


Figure 4 An illustrative visitor path recorded on the plan of: (a) the Sainsbury Wing, (b) Castelvecchio, (c) Tate Modern, and (d) Pompidou.

Interestingly, Castelvecchio is the gallery where the visitors observed stay longer than in the rest of the cases, both in absolute terms - 50 minutes on average - and in relation to the floor area, which is, as we will see, three times longer than at Pompidou and Tate Modern. On the whole, people tend to exhaust almost all the spaces in the museum (87% – see *Tracking score* in Table 1 and Figure 5), but comparatively do not appear to make a high number of stops (as suggested by the *ratio of sum of stops over sum of objects*). This might indicate that exhibits make visitors stop but more importantly, perhaps, make them stay.

This overall pattern of space use can be explained by the argument that, although the collection includes local art – the less well known works in the sample –, it is their atypical arrangement, and in particular, the manipulation of paintings as three-dimensional objects, which attracts’ visitors’ attention. This approach is mapped not only in the intersecting and encircling orbits of visitors’ paths, but also in the high percentage (38%) of *space-driven* visitors. Unlike in Sainsbury Wing, the latter spend time close to the average and make a considerable number of stops that fill the exhibition spaces, suggesting that they do not tend to stand to view exhaustively the individual objects on display, but stop at locations that allow a wider view of space or of objects as group compositions.

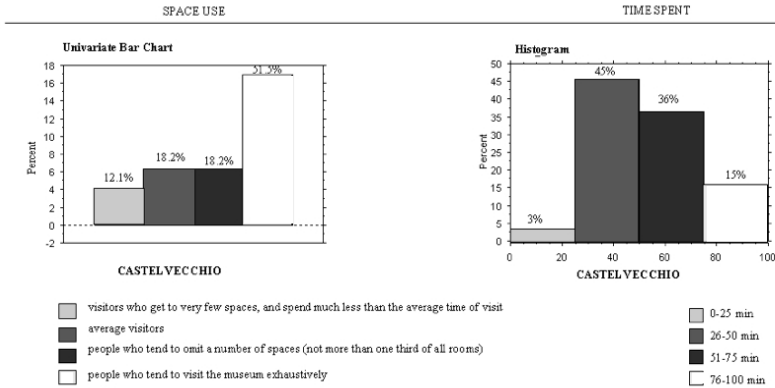


Figure 5 Diagrams showing the use of space and the length of *time spent* by visitors observed in Castelvecchio.

To summarise, the two museums are profoundly different in terms of both space and display layout. In the Sainsbury Wing paintings placed symmetrically at the end of vistas transform the circulation axes to a global system of goal-directed tracks. At Castelvecchio works, grouped and asymmetrically placed, create spaces that encourage exploration locally and guide the visitor from one exhibit to the next. We can suggest then that in the Sainsbury Wing, the layout of the display uses and exploits the qualities of the setting in order to maximise the impact of the exhibits; but the power of space overrides the intentions of the curators when it comes to the morphology of movement and exploration. In the case of Castelvecchio, Scarpa organizes objects in a manner which articulates and elaborates space, and this has the effect of making the visitor culture more exploratory, generating a more slowly-paced rhythm of perception. The narrative sequence winds its way through many spaces, lengthy intervals and breaks, while pictures and sculptures subdivide the route, stand in the way as temporary obstacles, and offer short-term goals.

Pompidou and Tate: an opposing approach to the learning and the social dimensions of the visit

Having introduced the issue of the interdependence of spatial and display layout, as expressions of museum intent, and its effect on visitor experience, we can now move to the second paired comparison of the National Museum of Modern Art, in the Pompidou Centre, designed by Renzo Piano and

Richard Rogers in 1977, and Tate Modern, the conversion of an industrial building by Herzog and de Meuron in 2000. Looking at the two layouts, of the fifth and the third floor respectively (Figure 1), both exhibit geometrical structure in that they are articulated on a modular grid, and spatial order, in that they consist of similar spatial elements in similar relations. More specifically, the layout of Pompidou is organized around a long axis – often referred to as the *grande avenue* –, that runs the length of the building, giving access to the spatial complexes arranged on both sides and making the link between the galleries, providing many routes choices (Figure 3c). This circulation pattern can be seen as an expression of the idea of the museum as ‘a city’ proposed and realized by the first director of the museum Pontus Hulten (1974).

Though Tate Modern seems also to be characterized by a long axis, running the length of the building and contributing to the initial orientation of the visitor, here galleries are more strongly organized, forming either a single big ring or two smaller ones, around a central space containing the vertical connections (Figure 3d). This pattern reflects the idea of the museum director Nicolas Serota, that ‘a large museum requires a simple plan’ (1998:14). The sense of traversing a single sequence is further reinforced by the visual organization of the layout. The galleries have minimal openings, and shape for the visitor homogeneous visual fields, usually unidirectional, and so generate a sense of static, self-contained spaces. In contrast, in Pompidou the dense network of connections, in different directions, between spaces, create constantly changing visual relations that create a dynamic sense of space.

This contrasting sense of space is further reinforced by the display layout. In Pompidou, the display follows an art historical scheme hanging by movements and artists in a chronological framework, an organization that recalls Alfred Barr’s famous chart (Barr 1936) outlining the genealogy of modern art, and placing the emphasis on the supremacy of Cubism and Surrealism. This narrative structure is expressed in the ordered and hierarchical layout. However, the rich network of connections between spaces weakens the boundaries between groupings, and suggests the opposite idea, that modern art is the product of mutual influences between artists, movements and styles. Looking at a specific object at Pompidou means discovering new relationships, seeing the same work in different combinations, and perceiving simultaneously surrounding visual realities. The maze-like character of the spatial structure and the profusion of oblique views and changing vistas engage visitors both physically and intellectually. But it is no accident that the key works are systematically placed in the most easily accessible spaces, those that are directly open to the main axis or those structuring the interior axis, while deeper and more segregated rooms are devoted to artists outside the main

stream or themes of special interest. This points to a relation of correspondence between space and display layout, and creates a synergy with the functioning of the museum.

In contrast to the art historical arrangement of the collection at Pompidou, Tate Modern adopts an ahistorical, thematic arrangement, proposing juxtapositions that transcend movements and time periods, and showing continuities across time. For example, two paintings by Picasso, *Goat's Skull, Bottle and Candle* (1952), and *Black Jug and Skull* (1946), and Damien Hirst's installation *Forms without life* (a glass cabinet with a collection of ornate shells as emblem of mortality, 1991), are shown in the same space under the title 'Memento Mori'. This suggests a tension between the linear organization of space and the non linear view of art. The strong sequencing of the galleries implies a sense of continuity and succession, while any sense of the development of a narrative is missing from the exhibition. However, it could be argued, there is a linking element between the two layers of organization, and that is the restrictive role of space. The spatial structure assures that the proposed juxtapositions are read as planned, galleries remain autonomous and their visual links limited, and space is not allowed to add relationships between works. In contrast to the constant dilemma of the visitor to Pompidou given the high choice of routes, in the Tate visitors wander through the galleries rarely thinking of choices, and for the most part having only to follow the succession of spaces.

As is to be expected from the high degree of sequencing in the Tate, there is a high degree of uniformity in the pattern of use, both in terms of *movement* and *viewing*, between the galleries, and visitors tend to traverse most spaces (they get to 81% - see *Tracking score* in Table 1), by following essentially the same route (Figure 4c). However, though Tate seems to work effectively in this sense, the museum itinerary does not permit exploration, either in terms of space or display. The links between works are already set up, so less intellectual effort is called for from the viewer and a high degree of control is given to the curator. At the same time, the social experience of the visit seems less interesting, since there are fewer possibilities that people moving in different directions will encounter each other, since following the same sequence, they tend to more or less remain with the same group of people.

The opposite principles are followed in Pompidou. Over and above the content of the works, 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. This is further reinforced by the observation that there is a strong tendency for visitors to get to the key spaces that structure the main route, and at the same time show the centrepieces of the collection. The

higher *movement rates* – with the exception of the central axis (see below) – are found in 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.

However, although the works are in this sense spatially structured, it appears to the visitor as a profusion of ideas and cumulative impressions, and this is reinforced by personal exploration. Visitors to Pompidou, taking advantage of the rich network of connections and the range of possible combinations between them, take each a different route (Figure 4d). But at the same time they visit the museum selectively in that they get to only 58% of the galleries and look at 8.3% of the display respectively (see *Tracking score* and *SumStops/SumObjects ratio* respectively in Table 1). These numbers are the lowest in the sample. But perhaps this is hardly surprising, given Pompidou is also the biggest museum setting in the sample and by far the most densely arranged in terms of object distribution.

Looking comparatively at the two museums, both have a high number of *eclectic* visitors (27% at Pompidou and 31% at Tate), who tend to visit selectively, meaning that they make many stops at certain spaces and few at others. Also, in both cases the dominant type of visitor is the *object-driven* visitor, attracted by individual works (62.2% at Pompidou and 62% at Tate). If this is to be expected in the case of Tate, where the juxtapositions of works are restricted within the limits of a gallery, in Pompidou this might be in part due, among other reasons, to the fact that although a high mean number of spaces are visible from each gallery, because of its high compartmentalization, the proportion of these visible spaces in relation to the total number of spaces in the layout is comparatively low.

Concluding, it may be argued that, while the Tate Modern works evenly, equalizing *movement* and *viewing* numbers in spaces, Pompidou is characterized by heterogeneity in the density of space use and the dominance of a space that concentrates *movement* as well as *viewing rates*: the central axis, where all the diverging paths necessarily converge. Designed to operate like a street, it maintains something of the original conception of the museum as a place to stroll, to look at works of art in a relaxed way. The axis makes interaction visible, maximizes people's co-awareness and enhances the role of museum as a public space.

Discussion

What then follows from these case studies from the point of view of understanding the relationship between what the museum offers and the way it is experienced by the visitor? A key factor is that the way the museums organize space and relate it to the display – the museum *intent* – has critical effects on the kinds of experience that are created for the visitor. In the Sainsbury Wing, the architectural design and the exhibition set up are in a constant dialogue, creating a strong visual experience of objects in space that is characterized by unity and coherence. The visitor is seen as a peripatetic observer who gathers information from the cumulative impressions of paintings seen through the large openings, in different directions as he moves in space. The importance of the whole collection seems to override the significance of a single work of art. At Castelvechio, in contrast, emphasis is placed on what happens locally, and space and objects become an integrated whole: space is the link between objects and objects cannot be seen independently of the space that contains them. In Pompidou, the complex, but structured, spatial layout promotes an exploratory and socially diverse experience, while at the same time the visitor retains a sense of the history of modern art. In Tate Modern, the simple and equalitarian organization of space and display emphasizes a more controlled informational experience that reinforces the curatorial view of art in a way which is not immediately discerned behind the arrangement of the collection that rejects established narratives and hierarchies of value.

In terms of visitor behavior, each kind of museum intent leads to its own characteristic style of moving and viewing, varying from the exploratory, with individualized routes, at one pole, to more deterministic and common routes at the other.³ At the same time, within these broad patterns, there are differences in how individual visitors explore spaces, which we have called the *object-driven*, the *space-driven*, the *browser* and the *eclectic*. These seem to be more to do with the exploration personality that visitors bring to the museum than to the layout of spaces and exhibits, although it is also possible to show cases where the same visitors seem to change their visiting style in different parts of the museum. It would be interesting to compare these observed categories of visitor with those proposed by Veron and Lévassieur (1983), namely, ant, butterfly, fish, and grasshopper.

These studies show the difficulties that lie in the empirical study of the museum–visitor relation, but they also bring to light a richness that might not be accessible to studies based on inquiry by questionnaire or interview. The visitor as consumer is *in* the museum, and is taking an active part in creating the experience of the museum that consumer studies must aim to capture. This may then be the way in which investigations can do justice to the rich variety

that museums currently offer, and allow us to progress towards a better understanding of the role that the *active visitor* can play in constructing the museum experience.

Notes

1. This distinction is based on an initial idea of Professor John Peponis.
2. Term borrowed from Niehoff (1968: 43).
3. The principles underlying this relation are beginning to be understood. For a summary, see Hillier and Tzortzi 2006, and Tzortzi 2013.

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