

**Daniel Koch**

KTH School of Architecture, Stockholm  
dk@arch.kth.se

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**Abstract**

*The question of what differentiates architecture and building has been raised many times in Architecture Theory, with various responses or explanations – usually under the precondition that architecture is something more. Space is the Machine makes a contribution to this discussion by elaborating some of the ways in which architecture becomes socially significant and how this differs from the vernacular. This discussion is herein continued, bringing in also a discussion of the formulation of spatial meaning as created through certain strategies of spatial configuration. In relation to the field of research, this paper constitutes a proposal of what this difference between architecture and the vernacular is, and how this is a difference in treatment of spatial configuration, making the findings within space syntax research pivotal for such an understanding. This is argued by use of a few socio-spatial figures commonly used in architectural design, that formulate positions and situations that are based on discrepancies between configurative relations of visibility and accessibility. It is finally suggested that it is the conscious and active use of these discrepancies that lies at the core of architectural design.*

**1. Introduction**

In the first chapter of *Space is the Machine*, Bill Hillier poses the question of what architecture adds to buildings (Hillier 1996, 15-53). The discussion aims to understand how architecture as activity or concept relates to buildings under the precondition that architecture is something *more*. This paper aims to continue this discussion through a proposal, which is not meant to provide a final answer but to suggest a difference between vernacular building and architecture in the treatment of spatial configuration. This is, while not often made explicit, something that has been touched upon several times by other authors in the field, and is something that needs to be addressed in light of other ongoing discussions regarding analysis of, proposals for and conclusions made on building layout.

Furthermore, the paper intends to continue the discussion of Peponis, Karadima and Bafna (2003) in *On the formulation of spatial meaning in architectural design*, by following a somewhat different tangent yet with the same intent: understanding the spatial, configurative, properties of space which are commonly and effectively used in architectural design to make statements which have significance beyond physical form but which originates within it. Here, we are concerned with 'meaning' in the sense of spatial configuration as describing identities, roles, and social relations which, also following Peponis et al's reasoning, do not require the reader/interpreter to know the intended specific work of reference but suggests social relations which are recognizable in a broader social and cultural context rather than explicit external references.<sup>1</sup> This paper will from such a perspective take the liberty to at first treat this somewhat simplistic through a series of *architectural figures* which constitute certain socio-spatial configurations. It is not intended to claim that the specific meanings suggested in the following are inherent in the spatial configuration as such, it is rather a way to discuss the relation of common social

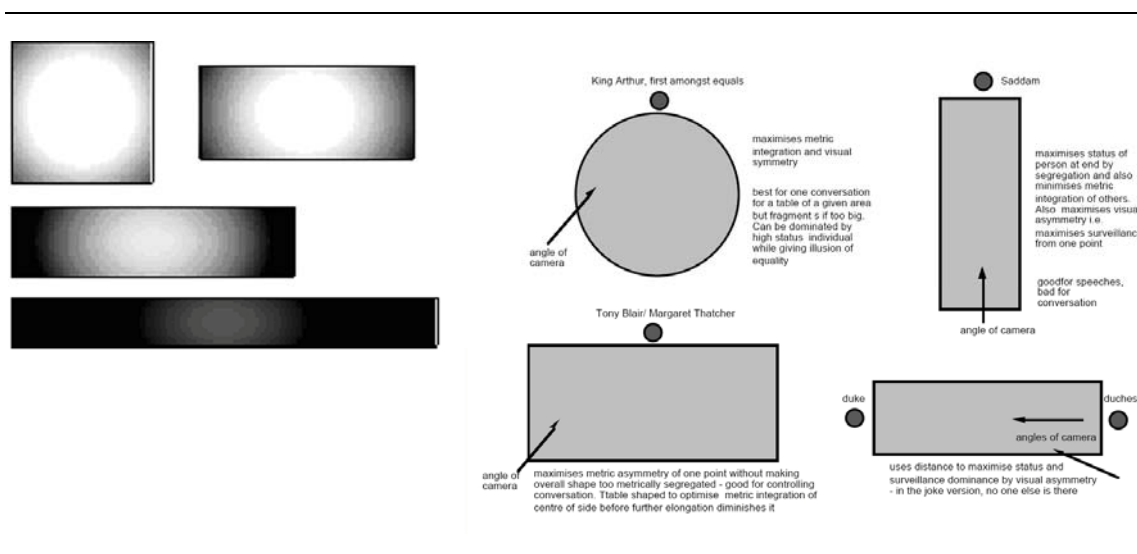
positions and roles by means of how they are often constructed and situated in space, in line with Hillier's statement that

*"A building then becomes socially significant over and above its functions in two ways: first by elaborating spaces into socially workable patterns to generate and constrain some socially sanctioned – and therefore normative – pattern of encounter and avoidance; and second by elaborating physical forms and surfaces into patterns through which culturally or aesthetically sanctioned identities are expressed."* (Hillier 1996, 24)

Within space syntax research, it has been suggested that the found relation between movement and accessibility is enhanced, if not dependent on, a close relation between visibility and accessibility (see e.g. Turner 2007). At times this leads to implications towards simplified discussions on the way space syntax could support architectural design. In relation to this, this paper constitutes a proposal: Architecture emerges when *Visibility* and *Accessibility* are disconnected. As such, it is a proposal aiming to rephrase the questions of space syntax analysis in relation to architecture, and to point to potentials and problems within research and practice if this is true. In this, it also builds on other work within space syntax research which are herein less explicitly referenced (e.g. Psarra et al 2007; Zamani and Peponis 2007; Tzorti 2007).

## 2. Square

To start with, I will (somewhat unfairly) propose that the main body of space syntax research, be it in buildings or in urban settlements, work with a spatial and cognitive notion that has its validity in certain specific kinds of spaces that could be described as streets or squares; that is, where the configurative connections of visibility and accessibility coincide. In *An Architecture of Seeing and Going*, Hillier convincingly argues that one of the reasons irregularities appear in grid structures is that they make distance in metric terms and visibility come closer to one another (2003). This does tend to be how emergent settlements evolve, and it can also argued to be the case with vernacular buildings, although this is something that must be taken with a grain of salt as it is definitely not a one-to-one relation but a play of sequences, insulations, and permeability (Hanson 1998). This notion continues into other situations where differences between accessibility and visibility tend to be treated as questions of resolution or scale, or in terms of which is of most importance, rather than as something that carries social or cultural significance in itself. From such a point of view the figure of the square is a specific kind of social space defined as spaces of co-presence in which everyone is also able to reach one another.



**Figure 1**

*The differences in metric and visibility integration shows as that. To the left, the darker spots are metrically farther from all other positions, but a person standing there would be able to see more. To the right, this internal discrepancy between visibility and distance is translated into seating arrangements. Figures from Hillier 2003.*

But, as Hillier further argues, even in the street or square there seems to be an inverse relation between visibility and accessibility in that the positions which see most, and thus are most visually integrated, are close to the corners, whereas the most metrically integrated positions are in the central parts (Figure 1). He continues by discussing the social significance of this through how it is used around a table to position people in more socially integrated, communicative, positions and in more status-filled, visible positions such as that a long table “[...] maximises the status of the person at the end by maximising metric segregation from others while also maximising visual asymmetry i.e. it maximises surveillance from one point and minimises it from all others” (Hillier 2003, 06.23). This discussion is regarding properties of space studied intrinsically, however, while the focus of space syntax studies is entities defined by extrinsic relations. From such a point of view, the square constitutes an entity of internal intervisibility and access which is the basis for space syntax graph modelling (lines, convex spaces, isovists), forming networks analysed as what makes up both emergent patterns of movement and being, and which support intelligibility (in a wider sense of the word). The intrinsic discrepancy of space argued by Hillier is lost. What I propose is to study this discrepancy extrinsically.

### 3. Balcony

One of the simplest forms of such disconnection between accessibility and visibility lies in a figure that is common also within vernacular building: that of the balcony. What the balcony does is, in effect, to allow one space to be visible from another space regardless of restraints to accessibility, be they of configurative or regulatory kind. The balcony allows someone(s) to see something that is comparatively far away in terms of access. The figure can be exemplified by a passage from Emile Zola's *Au Bonheur des Dames*:

*“Mouret, standing alone, planted himself beside the hall balustrade. From there he dominated the whole shop, for he had the mezzanine departments around him, and could look down into the ground-floor departments. Upstairs, the emptiness seemed heart-breaking to him: in the lace department an old lady was having all the boxes ransacked without buying anything; while in the lingerie department three good-for-nothing girls were sifting slowly through some ninety-centime collars. Downstairs, under the covered arcades, in the shafts of light coming from the street, he noticed that the customers were becoming more numerous. It was a slow, broken procession, a stroll past the counters; women in jackets were crowding into the haberdashery and hosiery departments; but there were hardly anyone in the household linen or woollen goods department.”*  
(Zola 1995, 94-95)

Whereas the private balcony of a villa or a flat has its accessibility restricted in terms of who controls the entrance, there are many public situations where the balcony is used. Even more so if we leave the specific, physical form of the balcony to redefine it as a figure for the configurative setup where some (usually fewer and more static) are allowed to gaze upon others (usually more and more mobile). These we recognize as café windows, places in select squares or streets in the urban fabric, and from literal balconies such as cafés in the central courtyards of department stores or over the 'streets' of shopping galleries. While not *actually* restricted in access, they are separated by distance and thus requiring comparative effort to reach. Furthermore, they are usually set up to let those on the balcony study the others without them necessarily returning the favour; this is usually the point, and where we will remain in this discussion (balconies for other purposes will herein be treated as another figure). This is a social description of space that is dependent on spatial configuration, and in many cases created solely by configurative means.

In this sense the extreme form of the balcony becomes *Panopticon* (Foucault 1997), which further emphasizes the discrepancy between the watcher and the watched, and which is quite literally a spatial construct (though social discourse tend to treat it in terms of abstract processes in society). In Foucault's argument, the figure of the balcony, taken to the extreme, becomes a means of control of conduct by placing some (the prisoners) under the *possible* surveillance of the other, where it is not the actual surveillance but the fact that the watched do not know if they are being watched or not that works as a disciplining mechanism. This is also the argument taken further in discussions of camera surveillance and so on: it is not the *fact* of someone seeing what you do

that makes you self-conscious and causes you to follow norms and expectations on behaviour, it is the *possibility* of it happening without you having control over it. In this sense, the figure of the balcony often coincides with the figure of the tower, and that of power (see e.g. Kramer 1998, 77; Markus 1993), although it should not be taken for granted that this is the case. This figure, however, is one that we can invert.

#### 4. Catwalk

Another example by Zola can serve as a starting point for a discussion of the inversed relation between spectator and performer where, in configurative terms, the distinction between visibility and accessibility is the same whereas in directional terms, the situation is dramatically different: the few is put on stage for the many. Again, finding situations where this is the case is not difficult, be it through the formally restricted situations such as the catwalk, where mannequins step out on stage with the main purpose of exposing themselves and their clothing for the audience, or in less formally defined ones where one simply ends up being watched by others. The social effects can be exemplified through a passage from Zola:

*"The next day, at half past seven, Denise was standing outside the Ladies' Paradise. [...] A cold wind was blowing and had already dried the pavement. From every street, lit by the pale early morning light under an ashen sky, shop assistants were busily emerging, their overcoat collars turned up, their hands in their pockets, caught unawares by this first nip of winter. [...] Denise noticed several of these gentlemen stared at her as they passed. This increased her timidity; she felt quite unable to follow them, and resolved to wait until the procession had ended before going in herself, blushing at the idea of being jolted in the doorway in the midst of all those men. But the procession continued, and in order to escape their glances she walked slowly round the square. When she came back she found a tall young man, pale and ungainly, planted in front of the Ladies' Paradise; he too appeared to have been waiting for quite some time."* (Zola 1995, 31)

A discussion which can be used to refine this figure of discrepancy to closer tie in to one of the main questions of space syntax, namely how spaces without *formal* constraints to accessibility still have configurative properties that regulates and stipulates it, is José Quetglas's analysis of Mies's Barcelona Pavilion. He phrases it as: "[i]t is a house without doors. Open or closed?" To then respond with that "Mies's Pavilion is a closed space." (Quetglas 2000, 385) The reason it is a closed space is, according to Quetglas, not that it has physical boundaries keeping people out, indeed, one of the defining traits of the pavilion is that it has no doors, but that the way the architecture constantly and repeatedly de-emphasises access while supporting visibility describes it as something other than the street below:

*"The space of the pavilion remains 'retenu par la géométrie,' according to the constant method in all of Mies's architecture. It deals with the arrangement of one or various horizontal planes, detached from the ground, where the lower plane always designates a strict surface. [...] If the platform is enough to define the space of the Pavilion as different, to segregate it as a stage separated from the ground that the public of the Exposition walks on, the plane defined by the two covers, reduced to a sheet, will serve to transform this space, not only into something different but into something enclosed, into an interior."* (Quetglas 2000, 386)<sup>2</sup>

By means of *disassociation*, the plateau becomes something else, and by means of making it *exposed* it becomes a stage where those upon it are in a form of performance situation. One of the effects of this is demands being put to be comfortable under the consecutive scrutiny and the risk of making a fool of oneself in a public situation; a situation that, as Bourdieu and Darbel (1991) or Bennet (1995) have argued, disciplines the ones put on stage without having to explicitly regulate behaviour. Furthermore, the demands put on those entering the stage make people more likely to *exclude themselves* in cases where they are uncertain of how to behave under such scrutiny, similar to the example from *Au Bonheur des Dames* above. On the other hand, it is also a place where those more comfortable with expressing their knowledge and taste can excel in the eyes of the masses (Giddens 1984; Koch 2007), and the possibility to express claims of status through the right to and comfort in being there (Zukin 1995).

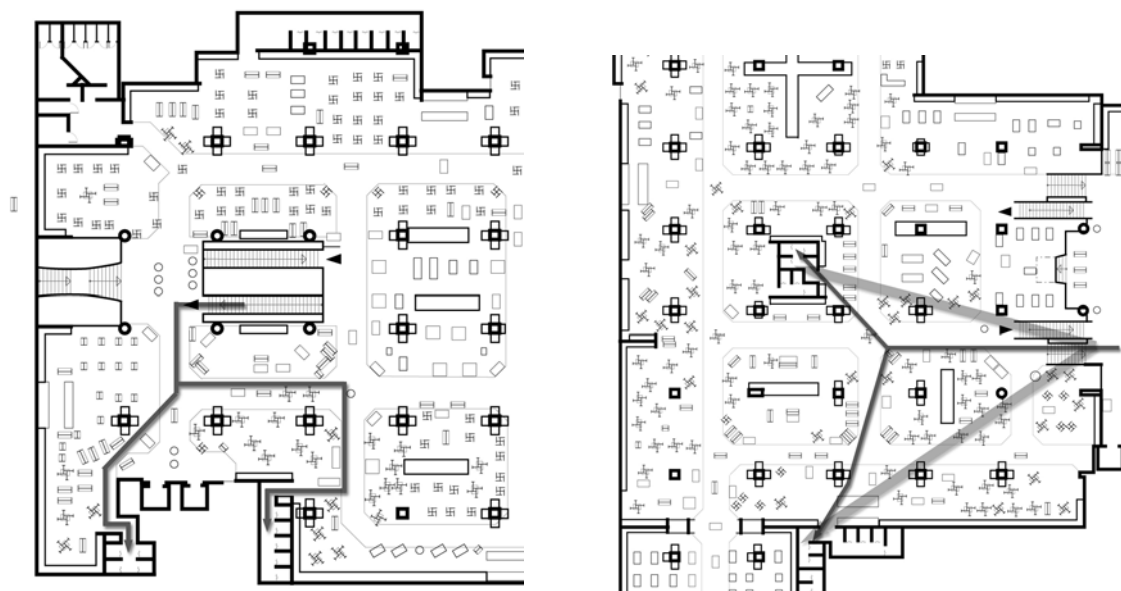
Again, it is important here to keep in mind that while the figure is the stage, what interests us is the situation where a place is more exposed than it is accessible, where to some extent the stage is unsatisfactory as model because it often has formal restraints on who may or may not step up on it, as well when and how to. The figure stands for the exposure of few for many, whereas the balcony puts focus on the ones outside of it, leading to descriptions of how viewer and the viewed can and should relate to one another as well as indirectly regulating behaviour. These are factors similar to the ones in Hillier's argument regarding the table (above): a status that is indicated by emphasizing *visibility* over *accessibility*. Here we can see both the balcony and the stage as potentially expressing status by on one hand indicating *power*, and the other indicating *representation*. From such a perspective, *stage* and *balcony* are different views of the same spatial situation, seen from different agents.

## 5. Wardrobe

Let us next turn to a figure where the relation between accessibility and exposure is inversed: the wardrobe. Like the other figures, this figure stands for a certain meaning of the word, which can be described through the following:

*"From about 1840 onwards, the closet offered, instead, diminished architectural expression. The storage of clothing had been respatialised as a kind of shameful secret. The closet not only concealed the things it contained but, significantly, promised to hide itself." (Urbach 2000, 343).*

We will at present stay clear of the psychological, historical, or social analysis of this change, and stay within the perimeter of the closet as a spatial figure that hides itself. It serves as a figure for that which is primarily *accessible*. This can be argued to be the case for many functions along corridors, or close by main streets yet in back alleys or on secondary connections. In doing so, it emphasizes utility over representation: it is something we need to have handy, but this use is not of the kind of significance that it should show. In some cases, it furthermore suggests knowledge. It could be the boxes hidden under the bed, the hidden wardrobe door in the wall, the kitchen drawer (as opposed to the glass cupboard), or the small kiosk or café constituted by little else than a hole in the wall, not announcing itself until one is right upon it.



**Figure 2**

*Debenhams, Stockholm: dressing rooms for men's fashion (left) and women's fashion (right). The darker arrows indicate accessibility, the lighter arrows indicate visibility. Note how they are similar in one and differentiated in the other, even made visible from the entrance to the department.*

This, it is important to note, is something different than the in Urbach's argument earlier wardrobe: the exposed hiding place, which makes a completely different statement. A difference which, notably, tends to separate the way the dressing rooms are gendered in shopping space (Koch 2007; Figure 2), and a difference primarily in exposure; both of these kinds of dressing rooms are constituted by low accessibility in space syntax terms. Yet the exposure is not of the space or actors in it itself, but of the entrance or exterior of it, playing with the ideas of the illicit gaze (Burgin 1996).

If we remain within the figure, and look closer on the spatial formulation itself, we can turn to Beatriz Colomina's analysis of Adolf Loos's villa for Josephine Baker, which brings light to the differences of these two situations:

*"As in Loos's earlier houses, the eye is directed towards the interior, which turns its back on the outside world; but the subject and object of the gaze have been reversed. The inhabitant, Josephine Baker, is now the primary object, and the visitor, the guest, is the looking subject. The most intimate space – the swimming pool, paradigm of a sensual space – occupies the center of the house, and is also the focus of the visitor's gaze. As Ungers writes, entertainment in this house consists in looking. But between this gaze and its object – the body – is a screen of glass and water, which renders the body inaccessible. The swimming pool is lit from above, by a skylight, so that inside it the windows would appear as reflective surfaces, impeding the swimmer's view of the visitors standing in the passages. This view is the opposite of the panoptic view of a theater box, corresponding, instead, to that of a peephole, where subject and object cannot simply change places." (Colomina 1996, 260)*

We can again see the importance of understanding what is expressed by the relative differentiation between accessibility and exposure, as the two kinds of dressing rooms form entirely different identity figures. The men's dressing rooms are wardrobes in the current sense of the word, whereas the women's dressing rooms constitute something else; the exposed wardrobe. From a social point of view, one tells of utility and the other of hiding. What differs the latter form of wardrobe, the 'peephole', from the stage is the control over when and how one is seen, the degree of knowledge of whether one is watched or not, and the sort of activity taking place in the exposed space.

To some extent, the wardrobe's form of discrepancy is, by physical constraints to configurations of space, harder to achieve through spatial configuration, but still forms an important comparative figure because it takes a step to actively decrease visibility while containing or increasing accessibility; an important means through which architecture expresses social roles and significance.

## **6. Glass box**

A key to the main question of this paper, the difference between *seen* and *reached*, can be found in the use of glass encasings and glazed walls, as it is here the play takes on its most demonstrative form. For this discussion, Baudrillard (1996) makes an important point in describing how glass transforms the commodity into the sign of itself: glass, a transparent boundary, lets through a visual representation while restricting access and, in this process the object is turned into representation rather than an artefact. In emphasizing representation and limiting accessibility it further implies status and exclusivity; an argument similar to Hillier's (2003).

It is tempting to transfer this argument directly to glass architecture. However, this would miss one other important point: these transparent boxes are invariably locked, requiring personnel to open them to allow touching or trying. Glass can be seen as performative operations regulating the relation between exposure and availability of that which it contains so that one is promoted over the other like the figures of balcony and stage. In this way, in exposing the commodities within, their right to be represented is ensured while the effort to reach and the limitations of who can do so impose requirements of purpose and membership.

From this light the glass wall turns out to be not *one* form of boundary, performing the *same* operation in all situations. Rather, what it does is that by allowing exposure *independently* of availability, it allows representation *independently* of access or utility. The glazed wall showcasing the

exclusive brands of cosmetics along Klarabergsgatan in Åhlens City, Stockholm, is doing a whole different thing from the glazed walls of H&M with openings directly into that which is seen within. To reach the exclusive cosmetics in Åhlens a series of turns must be made and the effort required is higher than for other cosmetics not exposed to the street, all while they present themselves to the most crowded streets next to the department store (Koch 2007). These tactical, performative operations are almost exclusively in use by high-profile status categories and can shift dramatically by simple means of altering the degree of linearity of the boundaries as accessibility regulators. Placing commodities in endcaps (Underhill 2000, 79), the far ends of sequences or aisles, performs the same operation of differentiation *intrinsic* to spaces, as in Hillier's argument above (2003). They are seen much more than reached, and thus, their representative function is emphasised over their utility or their function as goods that should be bought.

## 7. The Argument Rephrased

Let us return, finally, to the definition of architecture discussed in *Space is the machine*, to see how the above presented argument falls into this. As the discussion evolves, Hillier later on states that

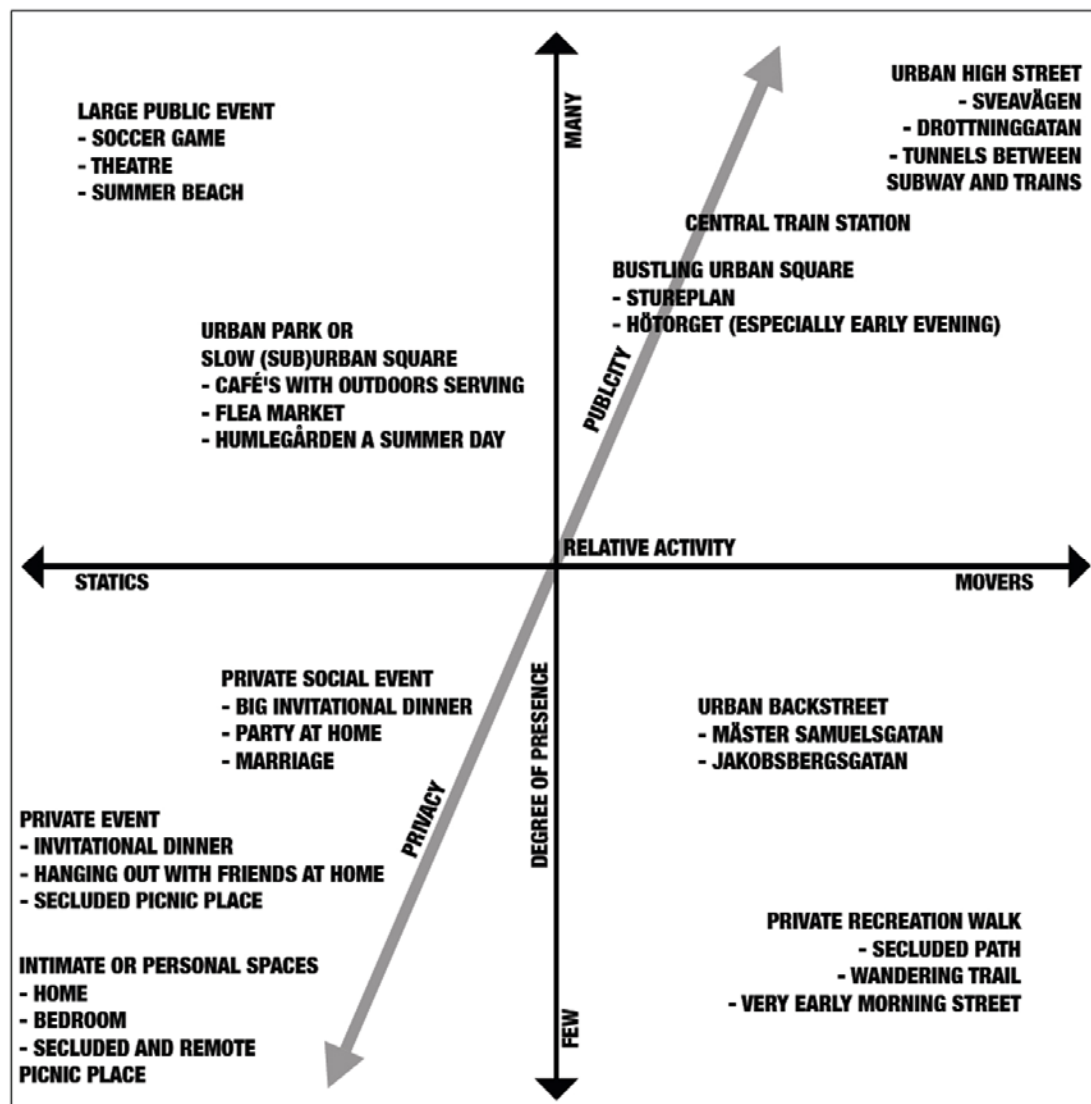
*"Architecture begins when the configurational aspects of form and space, through which buildings become cultural and social objects, are treated not as unconscious rules to be followed, but are raised to the level of conscious, comparative thought, and in this way made part of the object of creative attention. Architecture comes into existence, we may say, as a result of a kind of intellectual prise de conscience: we build, but not as cultural automata, reproducing the spatial and physical forms of our culture, but as conscious human beings critically aware of the cultural relativity of built forms and spatial forms."* (Hillier 1996, 45-46)<sup>3</sup>

We can say that architecture is the imposition of a certain kind of knowledge and reflexivity on the process of designing or refining a building that, in part, is the effect of the awareness of choice, something further developed by for instance Lars Marcus in *Architectural Knowledge and Urban Form* (2000). In this way, architecture becomes a question of communicating priorities – that is, of what choices are made *instead of or over other possible choices*. In this, it becomes a statement of value (Lundequist 1998). This does not say that vernacular building is not a process of decisions that reflect values; it is to say that the vernacular is less aware of these choices and priorities, making the communicative role different. However, due to the physical form of architecture (or buildings), it will always be unable to be precise or general enough to communicate the range of values that is to inhabit it; there will always be a conflict that calls for prioritisation and choice. This position of architecture as neither precise nor general enough, in semiotic terms neither *parole* nor *langue* (Tschumi 1996), is important to understand as part of the way it is appropriated and designed. The lack of ability, inherent in concrete space, to present solutions that correspond to the multifaceted social logics that inhabit it leads to the situation where first, change is constantly driven by this lack, and second, the solution always lies in choice of which of the relations to give precedence in each case.

What makes space syntax powerful in this analysis is that we can move from analysis of static situations to performative operations of on the one hand formulations of architectural designs as a question of spatial situating, and on the other hand the situations as results of emergent patterns of presence and absence of people. That is, we can on the one hand formalize the way in which this is given expression in spatial form by analyzing spatial configuration of visibility and accessibility, and on the other use established knowledge of movement flows and presences as a result of spatial form to understand how the situations will emerge in spatial structures. *Because* there is a relation between accessibility and flow, we can understand the emergent role of a space as stage or audience, balcony or catwalk, wardrobe or glass box. It is no longer a simple question of interior versus exterior, or programmed spaces in relation to one another, but a question of how emergent patterns of movement and being situate people in relation to one another through spatial configuration.

We can express this as in the figures 3a through c. The first figure illustrates social situations as placed in relation to degrees and basic forms of presence: many and few on one axis, passers-by and static on the other. Space syntax mainly works with the three quarters of this to the right and

downside, whereas it seldom works with the top left quadrant where the *attractors* have as most relative power. Using this basic figure, based on what can be measured by and large through accessibility (Hillier 1996) we can illustrate how exposure works in relation to this. A balcony, for instance, can do the work of figure 3b. It allows the private to survey the public. In this form, the balcony could also be the apartment window. The catwalk, on the other hand, does the work of figure 3c. It exposes the private to the masses (which means it is not private any more, but this is another discussion). This is a means to emphasise aspects of *representation*, which added to the question of the physical transition from the spectator to the scene, or the other way around, makes it even more complex, and questions of how and where connections and disconnections are made, as studied by Conroy-Dalton and Kirsan (2005), become even more important. Much of this is performed through configurative form without formal restrictions to access.



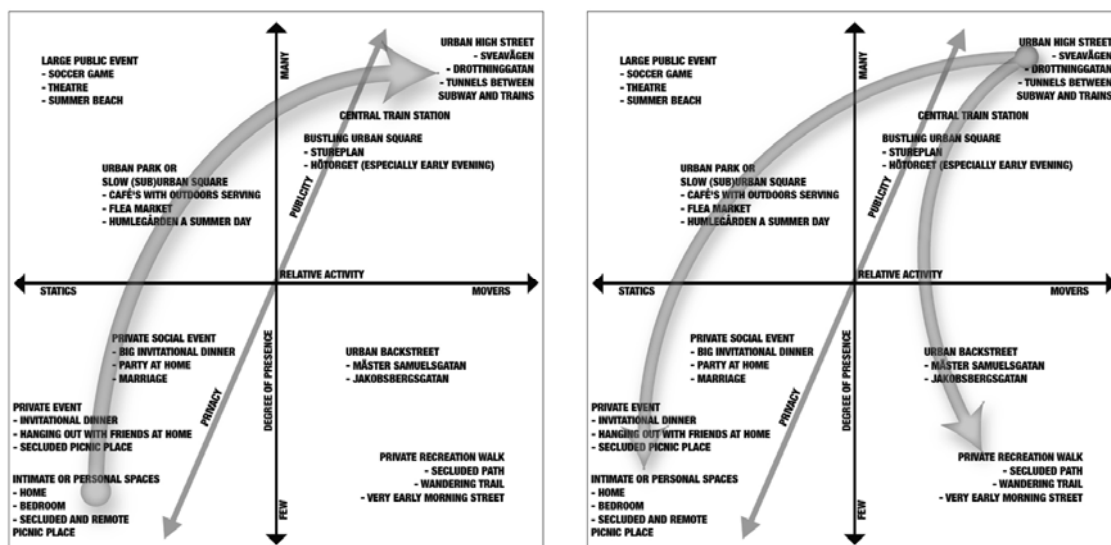
**Figure 3a**

A simple figure of social situations, and their definition as either consisting of static people or flows on the horizontal axis, and amount of people present on the vertical axis

If these three systems work to propose social and cultural positions of status, privacy, publicity, power, and so forth, the question must be put on what grounds this is done. To what extent is there a social system that they support or express, maintain or imitate, and to what extent does this spatially constructed map of positions precede the social positions themselves? This would be Baudrillard's (1983) argument, which while having merit is deeply problematic. A point of such an argument that can be integrated, however, is that it is in its representation the system gains its



social significance. To some extent, applied to spatial configuration, we have a reformulation of the argument in *Space is the Machine* (Hillier 1996).



**Figure 3b and c.**

We can see how the balcony (b, left) and the stage (c, right) connect places and situations otherwise strongly separated in the scheme – something that can be done by spatial figuration alone.

We can thus speak of three spatial systems – one of accessibility, one of exposure, and one system of the relative degrees of these two compared to one another. These three systems are *always* played with in architecture, and equalising the two requires deliberate design choices to that effect. To some extent, it can be argued, this is an effect of on the one hand the three-dimensionality of architecture, and on the other the relations between exterior and interior that is to be defined. Thus while this is the core of architectural design, it also seems to be something that lies inherent in spatial form overall - indeed, we have recognized that the street and the square, the figure that attempts to equalize exposure and access, is by no means neutral or homogeneous (Hillier 2003).

## Conclusion

We can see that one of the most pervasive, effective, and powerful means through which architecture formulates social significance and social meaning is through the *separation* of accessibility and visibility, and furthermore that this is an area where space syntax theory has the possibility to provide a lot of power into the analyses, yet which within the field is relatively little explored. It is the proposal of this paper, that it is also one of the means through which *architecture* differentiates itself from the vernacular in that it intentionally plays with this relation between access and exposure to express values, which arguably is one of the primary purposes of architectural design. In this sense, even the apparently dysfunctional, illogical or inexplicable disconnections may be that which makes all the difference. This is important to have in mind when studying architectural design, as well in communicating the benefits and propositions of space syntax with architects, as the regulation of flows and ease of access or orientation might actually be contrary to that which the architect has been tasked (or have the intent or wish) to formulate through spatial form. How this is to be integrated into the existing methods and tools remains to be developed, as they do not easily lend themselves to questions of directionality and non-reciprocal relationships such as those herein discussed.<sup>4</sup> Methodological and practical problems aside, these questions are important to address within space syntax research, and while not easily applicable to the field's tools and methods except in a few specific cases, seem to be clearly within the boundaries of space syntax *theory*.

## Notes

- 1 In this sense it can be questioned if "meaning" is the best term in this case, but we are here using the term to suggest communication of values, either directly and through conscious interpretation, or indirectly through lived space in how it constructs habits and regulates conduct.
- 2 retenu par la géométrie – 'retained through geometry'; that is, Quetglas claims that Tschumi consistently work with defining (and enclosing) spaces through geometry that are in some senses open or undefined.
- 3 intellectual prise de conscience – (roughly) 'intellectual awakening'; that is, architecture comes into existence with the awareness of the cultural implications of building, and the following intentional manipulation of built form to achieve certain effects.
- 4 It is tempting to move into a discussion on the use of 'knee-height' and 'eye-height' analysis common within space syntax studies, but such a comparison only responds to specific (if common) forms of these figures – most easily applicable in the case of the glass wall. It is of interest to do this kind of study, but how to work with three-dimensional setups is a lot more complicated – not to mention the way some of them are more or less inherently directional. 'Exposure per integration to integration' is a potential figure to work with, but exactly how such a measure would look or if it would actually give valuable results is also something that must be thoroughly investigated, amongst many other forms of modelling.

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