The Jacobs’ Urban Lineage Revisited

Analytical rudiments for the further development of the phenomenological approach to the study of the perception of people in urban space implicit in Jane Jacobs´ work

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Abstract. Since the almost simultaneous publication of Kevin Lynch and Jane Jacobs’ seminal and pioneer urban manifestos, the discipline has been increasingly permeated by what could be rightly called the phenomenological impulse. While sharing methodological principles, however, they represent two very distinct approaches to the study of urban matters, a distinction rooted on their chosen object of study. The drawing of this distinction constitutes this research’s point of departure. Its fundamental aim is to help further the development of what we characterize as the Jacobs’s lineage of urban thought. To this end, the paper outlines methodological rudiments for the development of a methodological tool that would allow the beginning of a systematic study of the patterns of people’s presence and absence in urban space (streets). We call it Urban Polaroid. This work is part of a government funded (fondecyt 11110450) project.

Keywords. Urban phenomenon; phenomenology; Urban Polaroid; space syntax; Jane Jacobs.

INTRODUCTION

Lewis Mumford famously branded Jane Jacobs’ work as “home remedies for the urban cancer” (Millner, 1986). It was more than the derisive characterization of an opinionated and well-read urban scholar. It reflected the mood of a whole generation of urban planners that have systematically sought the source of urban knowledge in the study of the already built cities and how we perceive it. This archaeological kind of approach to urban studies has evolved, via Space Syntax, into a highly sophisticated and successful methodological corpus for the understanding of urban space. We call this the Lynch lineage of urban thought. This said, we argue that there is another equally distinct lineage. One that springing from Jacobs’ seminal work- for reasons that will presently be discussed- has remained markedly underdeveloped. This lineage seeks urban knowledge not in the study of the perception of urban space (3D and 2D) but in the perception of that other highly differentiated spatial manifestation in the city: people. This paper offers methodological rudiments to further the development of this lineage. Its central argument connects with Hillier’s fundamental critique regarding urbanism’s historical and atavic
tendency to dogmatically prescribe as well as to the sheer lack of analytical tools for urban analysis. It also connects with Ratti’s critique of Hillier’s work regarding the leap of faith implicit in Space Syntax predictions based on the axial map. It differs with both, however, in the object of study to which we apply ourselves.

**DRAWING A DISTINCTION BETWEEN THE LYNCH AND THE JACOBS’ LINEAGE.**
Written from the point of view of a pedestrian sensible to the unique and ever understudied phenomenon of perceiving another human being, Jacobs manifesto Death and Life of Great American Cities (1961) was an open and frontal attack against the planning tradition advocated by leading figures such as Le Corbusier and Ebenezer Howard and their anti-autopoietic impulse towards the ruralization of the urban universe and the urbanization of the rural universe respectively. Both of them united by their reliability on the new means of transport as a solution to urban ailments, a stance widely trumpeted by Soria Matta and already implemented in two highly praised precedents: Barcelona’s *eixample* and the rebuilding of Paris. A school of urban thought that at least in the United States had by then become the school of choice of both, planners of academic pedigree and business speculators alike. It was the already proved pernicious consequences of this school of thought that Jacobs famously perceived in the economically informed interventions of Robert Moses in Manhattan.

Against this tradition, one of her prevailing concerns was, as she called it, “the social behavior of people in the cities", meaning by cities the streets we walk every day. Whereas it is a fact that her observations lacked rigorous analytical backup, her general methodological framework and object of study were unequivocal: the experience of walking through the city focusing on the patterns of people presence. Not for nothing she is credited with having introduced the notion of “eyes on the street", by which she meant not “private eyes" but presence and co-presence in the Hillerian sense, particularly, that of residents.

Lynch’s urban approach (1960), on the other hand, was also rooted in the pedestrian’s perception, but this time, of urban space. That is to say, Lynch’s object of study was the perception of constant spatial patterns through our daily navigation of the city streets, the current validity of his approach becoming manifest in freshly opened avenues of urban research (Morello and Ratti, 2008). Indeed, it has been this later lineage of urban studies the one that has seen the most dramatic developments in the last decades. This approach, characterized by its intrinsically archaeological nature, concerns itself with the perception of urban space- inhabited or in ruin like state- from a geometrical or topological point of view, depending on the placed emphasis.

A representative and consistent offspring of this lineage of urban studies is the ground breaking body of work developed by the Space Syntax Lab at the Bartlett School of Architecture, UCL in London and all that has sprouted from it. Hillier- its founder father- succeeded in developing a precise tool for the study of architectural and urban layouts, discovering in the process a close relationship between their topological configuration and the patterns of pedestrian flow they describe (Hillier, 1996). It has been its intrinsically non-discursive, phenomenological stance that has rendered most of its findings irrefutable, setting a new standard not only in urban analysis methodological consistency but also in urban data representation.

Another prolific offspring of this lineage has been the work developed at the Senseable Lab in MIT directed by Carlo Ratti. He and his team have mainly focused on the analysis of urban data in the form of electromagnetic pulses emitted by electronic devices (chiefly mobile telephones) carried by people every day during their daily urban navigations. Interestingly enough, it has been precisely Carlo Ratti, one of Space Syntax’s techniques most effective critics, who has brought Space Syntax principles to its last logical consequences by developing Digital Elevation Models (DEMs) with a view to complement Space Syntax reductive two-dimensional approach (Ratti, 2005). That is to say: a three dimen-
professional version of Space Syntax that aims to incorporate sophisticated simulations of pedestrian movement and view sheds, among other factors.

This said, we argue that despite the great progress made by these representative techniques of urban analysis, they remain fundamentally speculative with regard to perception of people in space in the sense that none of them approaches it from an experiential point of view. That is, from the point of view of an embodied, walking subject. Indeed, whereas lines of research derived from Space Syntax’s developments have led to the development of agent-based models of pedestrian flow (Batty and Jiang, 1998), Ratti’s work has given rise to the “wiki city” notion, approach whose object of study is made up of electromagnetic signals emitted by electromagnetic devices (Calabrese et al., 2007a; 2007b; 2007c; 2007d; 2007e; Calabrese, 2008). In both cases, real people, understood as living human bodies, are nowhere to be seen. As a result of their eminently speculative nature, the predictions related to people’s presence on the street have remained potentially flawed in that they do not proceed from direct observation of people but from a priori speculations derived from computer models.

PEOPLE AS OBJECT OF STUDY
As it has already been amply discussed elsewhere, Jacobs and Lynch’s approaches were indeed tacitly grounded on a phenomenological standpoint (Seamon, 2012). This said there is a distinction that has not yet been clearly made. In phenomenology-at least in the case of the proto phenomenology of Goethean extraction- the fundamental law of knowledge generation is that this should be derived from a direct relationship with the chosen object of study. Thus the unequivocal Goethean admonition: “seek nothing beyond the object, they themselves, well contemplated, are the theory” (Seamon and Zajonc, 1998, p. 4)

Seen from this point of view, it becomes clear that the Jacobs and the Lynch’s lineages differ not in method but in their chosen object of study. Put differently, they differ on the source they turn to when in need of urban knowledge. Once this distinction is made, Space Syntax is revealed for what it is, namely, a very specific kind of urban phenomenology: a phenomenology of the city’s topology. One that gives us no direct knowledge about pedestrians patterns of behaviour. Ratti has already pointed out that space syntax’s way of proving the connection between these two variables is by means of surveys. This is, by means of “a posteriori” correlations between the axial map results and observed movement data (Ratti, 2005). In the case of Ratti’s DEMs, we see a similar procedure applied this time to the study of view sheds. His strategy of electromagnetic signal tracking on the other hand brings us closer to the pedestrian who, nonetheless, remains an electromagnetic mobile signal. As for Batty’s agent based models, we already fall into a thoroughly speculative stance regarding the study of pedestrian behaviour. In sum, whereas space syntax’s approach to people study is post analysis (and at any rate not sophisticated as an analytical tool), Ratti’s and Batty’s are downright non-experiential.

Jacobs’s approach, although still in a rudimentary stage, was a phenomenology of embodied people perception, an object of study that from a methodological point of view proved to be very difficult to map due to it being a moving target, so to speak. Thus although the impulse latent in Jacob’s work can be traced back, through Hall’s proxemics (Hall, 1969; 1973; 1976), down to the rather unknown work of the German architect Herman Maertens (1884), it has ultimately remained analytically weak. The fundamental aim if this work is to help to further its development by means of introducing methodological rudiments that would allow a systematic mapping of the human universe, so to speak, thus complementing the successful efforts made by the phenomenologists of urban space.

URBAN POLAROID (A METHODOLOGICAL OUTLINE)
Acknowledging from the outset that all record of an experience is a reduction of it, the basic methodological principle is the following. If what we want is
to know which are the patterns of people presence in the streets of any given urban area at any given time, then what we need is a simultaneous photographic record of all the streets within the defined perimeter. In principle, this could be done in two ways. One of them is by means of satellite or drone’s aerial pictures. In this kind of record, people become dots on the street. Another way of achieving this without having to fly away from the streets is to resort to a photographic scanning of the streets at observer level. While we consider this later path to be a properly experiential one, its implementation presents considerable and at the same time, interesting practical problems.

Just like space syntax’s axial map calculus depends upon the distance from all to all lines or streets, in order to obtain an accurate estimate regarding actual presence of people in the street, we need to capture the state of all the streets within the chosen area of study at the same time. So for example, if the intensity needed to validate the reliability of the study is, say, 3 pictures by segment (or block) and the total numbers of segments (or blocks) that make up the street is, say 10, the total amount of pictures needed for this particular street would be of 30. Seen from an ideal point of view, this means that what we really need in order to obtain a true “instant” or “Polaroid” of this street are 30 different cameras (people) taking a snapshot (in the same format: height, level, lens aperture, etc.) at exactly the same time. This process in turn should then be repeated in all the streets contained within the chosen area. If the total number of streets within this chosen area is, say, 20, the amount of cameras (people) needed in order to get the Polaroid is 600. Since logistically this is extremely difficult and probably counterproductive—though not impossible—, we resorted to urban journeys or navigations. That is, video/photographic journeys along all the streets contained within the chosen area of study. The consistency and reliability of this approach will depend exclusively on the amount of journeys undertaken in a day, month and year per each street under observation.

**CASE STUDY (CONCEPCIÓN, CHILE)**

All the streets belonging to the historical layout of the city of Concepción are journeyed along (for a plan, see Figure 5). To this end, we created a patrol of photographic record composed of 26 students. The format established that every street should be walked in straight, from one end of the perimeter to the other, and that all journeys should start at the same time, in this case, midday. Unless impossible, the itinerary must be made through pedestrian areas only. While doing so, a video record from a constant observer level and with constant lens aperture is done. Depending on the amount of frames exported from the video record, we obtain a photographic record of variable intensity. That is, an “n” number of frames per street segment, understanding for segment, the length of the street defined between intersections with other streets or, if preferred, between corners. In this case, we used a low intensity: 2 pictures per segment. Arranged in filmstrip format, this raw, unedited record shows as a result a reduced general state of the behavior of our visual field during the journeys (Figure 1).

Applying simple raster graphics, we then proceed to transform, frame-by-frame, all visual information in the shape of human beings into colored surfaces, in this case, a red surface (Figures 2 and 3).

This first step has the peculiar characteristic of being quantitatively and qualitatively very eloquent in that it already reveals a great deal of information regarding the patterns of behavior of our visual field with regard to the presence of people in it. (We have defined three kinds of archetypal visual information to be found within the urban universe: information in the shape of people, information in the shape of urban space and information in the shape of nature. This paper only deals with the first kind.) That is, how much surface of our photographically reduced visual field is populated by information in the shape of people. Comparing the colored area to the total of the frame, we then obtain the percentage of visual information in the shape of people for that particular frame. Doing the same operation with every frame
of a particular street, we then obtain the average percentage of information in the shape of people for that particular street. Finally, repeating the same operation in all streets gives us as a result the average percentage of information in the shape of people for this particular city at the particular time in which the video/photographic journeys were done (Figure 4).

Figure 1
Photographic filmstrips of both, longitudinal (bottom) and transversal (top) journeys through the analyzed area.

Figure 2
Rasterisation and calculus procedure for visual density of information in the shape of people of each frame.
PRACTICAL CONTRIBUTIONS

We believe the most important contribution that the implementation of this tool brings about is that of effectively complementing the abstract archaeological approach developed so far by the Lynch lineage of urban thought. Indeed, whereas Hillier’s space syntax, Batty’s agent based computer models and Ratti’s DEM’s and signal tracking techniques (to name a few) tells us in which streets people are more likely to be found, the urban Polaroid reveals *ipso facto* where people effectively are. Put differently, by departing from actual experience, the urban

![Figure 3](image-url) Filmstrips of both, longitudinal (bottom) and transversal (top) journeys with information in the shape of people in raster form.

![Figure 4](image-url) Table of quantitative levels of visual information in the shape of people per frame (columns) with averages per street (files) in the last column. Longitudinal journeys bottom, transversal journeys on top.
Polaroid reduces to nil the speculation implicit in most of the urban tools of analysis developed by the Lynch lineage representatives. Indeed, transforming the table numbers into graphs, the result shows a remarkable similarity with space syntax findings (Figure 5).

Red, our chosen color for high visual people density, tends in this case to coincide with the axial map analysis result, which, if applied locally, would show the central streets of the chose area as the most integrated one. Hence, although the knowledge obtained via the two approaches is quantitatively akin-as it can be readily gathered from the diagrams they yield-they differ dramatically in quality. One showing potential, the other showing actuality; one being of interest only to specialists (particularly transport engineers and property developers), the other to urbanists and citizens in general; one revealing information about the already built city, the other about the city yet to be built.

THEORETICAL CONTRIBUTIONS
One of Jacob’s central declared concerns was to get to know “how a city works”. What she called “the
underlying order of cities” (Jacobs, 1961, p. 25). In line with Luhmann (1995), today we might say that Jacobs’ quest was for the discovery of the laws that secure the autopoiesis of the urban universe and, as a consequence of this, its perpetuation in time. If, as the Goethean maxim goes, theory building derives from direct object contemplation, then, in order to obtain urban knowledge, all we need to do is to find out which is the urbanist’s object of study. Jacobs was neither explicit nor sure about the answer to this question. Yet her main object of study always remained people on the streets.

Very few shared with her this interest. One of them was the urbanist Jaime Garretón, author of the first truly general urban theory, for whom “nothing is definite in a city, except its laws” (Garretón, 1975, p. 273), laws that, according to him, are essentially communicative laws. To be sure, the laws of communication between people. This said, neither Jacobs nor Garretón developed analytical tools for the study of their chosen object of study. To be more precise, neither of them built a systematic corpus of study cases and as a result of this, as Hillier would put it, they remained prescriptively strong but analytically weak.

By focusing on the study of people in space rather than on space itself, this paper represents a primeval impulse towards the development of general analytical rudiments for the further development of the Jacobs’ lineage. Whether the urbanist’s own object of study is urban space or people remains too big a question to be answered in these pages.

CONCLUSIONS

Even at these early rudimentary stages, the Urban Polaroid technique of urban analysis has demonstrated to be a most useful as well as didactical complement to the abstract techniques championed by the Lynch lineage advocates. It does not only allow the systematic exploration of a thoroughly understudied, parallel universe, to the one by them explored. More important still, by being grounded in experience, it renders unnecessary all speculation regarding patterns of people presence inherent in abstract computer aided analysis. This might prove crucial in the cases where the axial map analysis does not conform to actual reality of a determined street or area of the city. Moreover, it achieves this without the need of people carrying mobile phones or any kind of microchips. This makes it less invasive and more citizen friendly.

Future complementary applications include a Polaroid of the visually perceived built universe and another of the natural universe, aspects that might throw light upon the other two archetypal kinds of visual information in the city and the relationship between them. In sum, the Urban Polaroid approach offers a portrait, and as such, a reduced view of a complex that we have called the “archetypal citizen”, according to previous research, the urbanist true object of study (Araneda, 2008; 2010; 2011).

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