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The true, the good and the beautiful

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ABSTRACT

Three dimensions are involved in the terms “true”, “good” and “beautiful”: they refer respectively to the concepts of Science, Ethics, and Aesthetics. Scientific statements can be assessed as true or false, according to the evidence; notwithstanding “post-modern” epistemology – the validity of “narratives” regardless of their verification while confronted with phenomena – they are of universal credibility and overcome the “here” and the “now”. “Good” and “beautiful” – or their opposite: “bad” and “ugly” – are something else: they concern value judgements that are place and time dependent. This is another yardstick: verification or refutation are no longer at stake, and their convincingness or otherwise depends on historical and cultural values, according to which they are not considered true or false, but good or bad, and beautiful or ugly – or some intermediary point along the scales. The confusion among these instances leads to a naïve approach to architectural configuration: options are mistakenly taken to be “false” or “wrong”, when in fact they are ethically or aesthetically determined. In such cases, architectural codes, by which we cherish places or otherwise, remain implicit, but they should be made explicit; it is wrongly assumed that “problems” (notwithstanding sheer incompetence) are the result of a lack of knowledge of the “truth”, when in fact their identification as such is a function of value options informed by ways of having, acting, thinking, and feeling – Pierre Bourdieu’s *habitus* – that position subjects in the social scale.

KEYWORDS

Science, Ethics, Aesthetics, architectural theory, space syntax, space semantics

To
Bill Hillier
In memoriam

As steals the morn upon the night,
And melts the shades away:
So Truth does Fancy's charm dissolve,
And rising Reason puts to flight
The fumes that did the mind involve,
Restoring intellectual day.[1]

(*William Shakespeare, John Milton and Charles Jennens*)

1 INTRODUCTION

How *good* a *theory* can be? How *true* moral *values* can be? This paper explores the idea that neither question makes sense. Theories and values belong to different and analytically separable realms of Philosophy – respectively *Science* and *Ethics*: the former does not refer to "goodness" (or "badness"), the latter does not refer to "truthfulness" (or "falseness"). And yet, this is not a philosophical text,[2] rather, it explores these dimensions in so far as Architecture is concerned (with a capital "A" when the word refers to the *discipline*), more particularly, the part of its corpus that considers *places* configured and explored as *constituents* of modes of life, perhaps the central tenet of Space Syntax Theory (Hillier and Hanson 1984). The separation is crucial for understanding *how the world is* – the realm of *objective reality* – and when and how we change our regard by asking, instead, *how the world should be* – the realm of our values and desires, in other words, the realm of *design* that *projects* – therefore envisages a *future of* – novel places. Some of the ideas presented here have been explored elsewhere, published in written form, in English or Portuguese, some have only been addressed in recent lives and talks. Concerning the published works, particularly in English, they will only be briefly restated for the sake of the argument, and references will be made to the texts on which they appear in unabridged form; those published only in Portuguese will be addressed more thoroughly, and even more so for those ideas that have only been explored in lives and talks. What matters here is the relation between the two halves of Diagram 1,[3] and, principally, their incidence in *architecture*. I dare present it in the opening paragraphs of this work, inverting the (perhaps) more ordinary procedure of displaying such schemes *after* a reasoning that prepares the ground for its discussion.

I start with the theoretical trends in Architecture and indicate my predilection. There follows the ontology of architecture I have been working with in recent times, so that the reader may identify the categories in which the examples fall. Then I show how the ontology of architecture is helpful in characterising assets we mobilise in our lives, drawing on Pierre Bourdieu's (1984) concept of *capital*. *Architectural codes* are discussed as Bourdieu's *habitus* and then a conclusion

closes the paper. All the way through I refer to Diagram 1, for it synthesises the reflections herein.

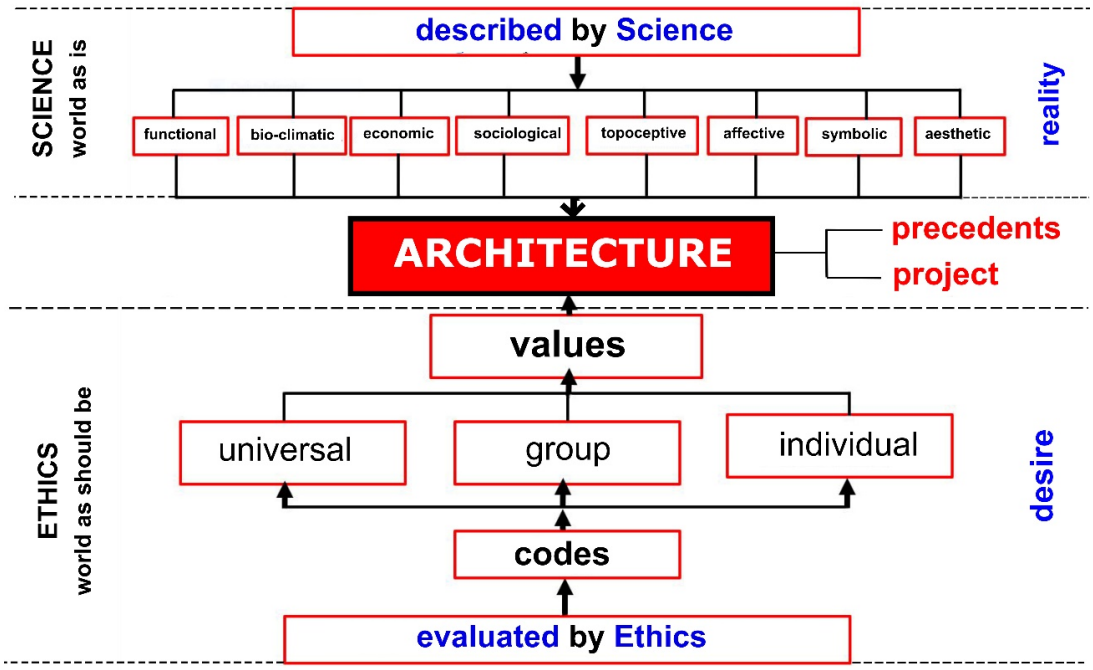

Diagram 1. Science and Ethics. The world *as is* (objective reality), the world *as should be* (the realm of desire). (Source: Author.)

2 THEORY IN ARCHITECTURE: TRENDS AND A PREDILECTION

Theory in the discipline of Architecture develops along two main trends: the enquiry into its *causes* and that into its *effects* (Diagram 2). The "world of architecture as is" (upper part of Diagram 1) may be thus characterised as a *dependent variable* (upper part of Diagram 2 – *causes*) or as an *independent variable* (lower part of Diagram 2 – *effects*). Diagram 2 shows these two trends and a predilection: the study of *effects* and, among these, the study of the *sociological aspects* of architectural performance, one of the dimensions of this "eight-function model".[4] Here, let it suffice to say that sociological aspects involve the following, expressed as questions:

> What implications does the configuration of form-space (solids, voids, and their relations) have concerning ways individuals and groups (social classes, genders, generations) deploy themselves in places and move through them, and accordingly what conditions are established for encounters and avoidances and for the visibility of others? What patterns of utilization of places are implied by the type, number, and relative location of activities in space and time? How does all this bear upon the production and reproduction of social structures?[5]

The enquiry into these aspects, albeit not exclusively, draws much of its inspiration from the concepts and method of Space Syntax Theory (henceforth SST), particularly from its

foundational book, *The Social Logic of Space*, by Bill Hillier and Julienne Hanson (1984). We shall now see how SST and other theoretical sources contribute to a proposed ontology of architecture.

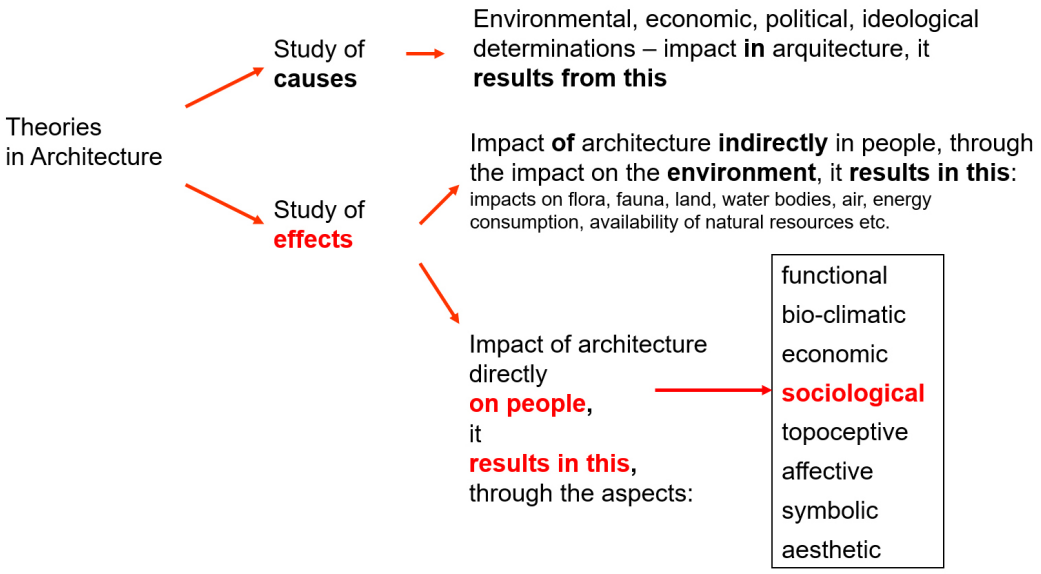

Diagram 2. Theories in Architecture: two trends and a predilection (in red). (Source: Author.)

3 ARCHITECTURE: AN ONTOLOGY

In this topic, the elements – and their inter-relations – that constitute an ontology of architecture are put forward. They are inspired by four great thinkers and three main theoretical stances. They are not literal as in their original sources, and the terms here are freely inspired by the reasoning found in three main works: 1) Hillier and Hanson's already quoted *The social logic of space* (1984); 2) Milton Santos, the great Brazilian geographer, from various works, e.g., *A Natureza do Espaço* [*The nature of space*] (Santos 2006); 3) Evaldo Coutinho, the renown Brazilian philosopher, mainly from his classic *O espaço da arquitetura* [*The space of architecture*] (Coutinho 1970).

An ontology is not a "jack-of-all-trades" device serving any purpose. Rather, it is designed so that the research objectives – the enquiry into *sociological aspects of architectural performance*, in this case – may be achieved. In other words, an ontology is *determined* by what is at stake, by *what matters*; it is *theoretically oriented*. The elements and relations that follow have been complemented, transformed, replaced, clarified along time, all this driven by the research tasks in question: it was the nature of the enquiry that has allowed for the identification of the lacunae of each theoretical stance below, the need to bring them together, and the ensuing cross-fertilization among their respective concepts and analytical categories.

Bill Hillier and Julienne Hanson (from the discipline of Architecture):

- *Open spaces* – unrestricted access
- *Closed spaces* – restricted access
- *The type of interface* between open and closed spaces: direct *x* indirect (setbacks, walls, reflecting pools, stairs, ramparts, ramps, tunnels)
- *Mode of disaggregation* of interior spaces (buildings)
- *Mode of aggregation* of buildings (settlements)
- Implications *intrinsic* to configurations ("syntax") *x* implications *extrinsic* to configurations ("semantics")

Space Syntax Theory focuses naturally on… space – *architectural* space for that matter, in which our stationary bodies locate and through which our moving bodies navigate. Hillier and Hanson (1984) as well as Coutinho (1970) consider *space* as constituting the language of architecture par excellence – therefore, their principal subject matter. However, they differ in so far as 1) Coutinho argues that, as a practical necessity, *space* is defined by *form* – i.e., volumetric elements that configure the boundaries by which voids are defined, and 2) while for SST spatial attributes are relational, i.e., a function of the topological insertion of a space in a system of interconnected ones, for Coutinho architectural spatial attributes are those of *natural space*, not only geometrical and topological but including all that is captured by the senses – seeing, smelling, hearing, touching – which brings phenomenologists as Zumthor (2000) or Pallasmaa (2012) close to him. On the other hand, if *spatial labels* (a bedroom, an office, a kitchen; or a school, a hospital, a concert hall) are not absent in SST reasoning, they will be granted a more important status here. A difference must be stressed between 1) implications which are *intrinsic* to configurations, and last as long as configuration lasts – the *syntax* of the place, and 2) implications which are *extrinsic* to configurations, as in conventional and historical norms of use, mutant in time with little or no morphological change – the *semantics* of the place – permanently (as in train stations lobbies turned into concert halls – e.g. Sala São Paulo, in São Paulo) or in "flip-flop" fashion (as in an express road on weekdays turned into a linear park on Sundays and holidays – e.g., Flamengo Park, Rio de Janeiro, or the Road Axis, Brasília).

Milton Santos (from the discipline of Geography):

- The spaces of *flows* (public open spaces at the level of the "whole", the "systemic", the "global" of settlements)
  - Determined by *fixities* ("magnets")[6]
  - Determined by urban configuration (topological accessibility),[7] which in turn…
  - ... (re)determines *fixities*, that (re)determine further flows etc.
- The spaces of *open fixities* (public open spaces at the level of the "parts", the "local")[8]
  - Alleys, streets, boulevards, squares, esplanades, parks, seashores etc.[9]
- The spaces of *closed fixities* (spaces *inside* buildings, fenced off from the territory at large)

- Housing
- Public buildings
- Private buildings
- Open air private areas (e.g., a private garden, a golf club lawn etc.)

Although not referring specifically to the "architectural couplets" from SST – closed *x* open spaces, or buildings *x* settlements – Milton Santos, although not saying so, is rather concerned with the ideas of "global" and "local" when he deals with *flows* and *fixities*: for him, two sorts of elements constitute the "urban object" (Hillier 1989), respectively, 1) the spatial structure of the settlement as a whole – "global", in SST terms – along which people move to and from destinations, and 2) spaces of destinations proper, mainly for stationary people ("magnets", in transportation studies), within plots of land which access is controlled by institutions of whatever kind – schools, hospitals, shops, the nuclear family. However, we profit from unfolding Santos' *fixities* into two categories, because stationary people do not only assemble in closed spaces (*closed fixities*) but also in bits of public open spaces as well – streets, squares, parks: the *open fixities* – which, although uncontrolled access-wise, are destinations conceptually and physically clearly identifiable in the landscape – Plaza San Marco, Piccadilly Circus, Champs-Élysées – the importance of which extends beyond their topological insertion in the system as a whole.

Evaldo Coutinho (from the discipline of Aesthetics):

- The *end-elements* of architecture:
  - *Exterior spaces*: open spaces of public use – alleys, streets, boulevards, squares, esplanades, parks, seashores etc. – open to improvisation and negotiation
  - *Interior spaces*: defined according to labels – house, office, shop, temple etc. – subject to attitudes (a *liturgy*, i.e., modes of behaviour as soft/loud voices, ways of dressing, body postures etc.) implied in their function
- The *mean-elements* of architecture
  - Buildings, trees, sculptures, natural features of the landscape: any three-dimensional elements that define *exterior space*
  - Walls, floor, ceiling, columns, any "sculptural" elements that define *interior space*

Finally, from Evaldo Coutinho comes the distinction, advanced above, between end-elements and mean-elements in architecture – architectural voids and volumes, respectively. The attributes of what Coutinho calls the "sculptural" components of architecture – any material feature by which space is configured – bear upon patterns of socio-spatial segregation, over and above relational attributes of the system, the forte of SST (Holanda 2007). However, although the main focus of attention is *space*, as in SST, Coutinho limits his regard to *interior* space: for him, the external space in between buildings, or spaces of the (socially appropriated) natural landscape are not "architectural" because their attributes (of light, sounds, smells, touch, temperature) are not

sufficiently manageable by the architect in order to convey beauty and a worldview (his viewpoint is from the discipline of Aesthetics). True enough, but, nevertheless, the way in which external space of settlements *is* socially configured, thus constituting modes of life (e.g., as widely demonstrated by Hillier and Hanson 1984), demands its inclusion as a category of end-elements in this ontology.

These three trends present redundancies and superimpositions. A "higher order" concept, then, brings them together and eliminates repetitions: the concept of *capital*, from Pierre Bourdieu's (1984) work, meaning resources, capacities, assets, means, ways through which a subject positions himself at a point in the social structure, which grants him determined status and privileges (or their absence). The foregoing categories boil down to *two sorts of capitals*, but consider first a broad view of them and their predominant relation with the macro-structures of society so that you may see how architecture befits such framework.

4 CAPITALS

In the sociological tradition we usually find two macro-structures constitutive of society, particularly in the Marxian one: the infra-structure of production, circulation, distribution and consumption of goods (social *production*), and the superstructure of politics and ideology (social *reproduction*). For our purposes, as morphologists of space and society – or of architecture and encounters/avoidances (Koch 2015) – we profit by including a third macro-structure: the socio-spatial one (Chart 1). But before embarking on this, allow me some comments on the other two structures and their respective capitals.

The concepts of *economic capital* and of *political capital* are more consensual in the literature, the ones of *ideological* and of *cultural* capitals, less so. It is not usual to divide them as in here, but consider the distinction: the former encompasses the *algorithms* we mobilize in daily life, as practical rules, theories we employ, consciously or otherwise, at every moment, games the rules of which became world-wide accepted thus allowing world championships, like those of chess, soccer, tennis etc. (although conventional, and having appeared in specific social environments), any information units (Dawkins' [1976] *memes*) that cross-cut gender, generations, nationalities etc. To use SST jargon, ideological capital is literally *global*, it is employed here *sensu lato*, i.e., *ideas* in their broadest connotation. *Cultural capital* is not "global", rather, it is "local", refers to "particulars", constituting specific social niches: the preferred football team, the spoken language, art, gestures, cookery, clothes, fashion, tastes of whatever kind.

And yet, there is a howling silence concerning assets in Bourdieu: the absence of the dichotomy inherent in SST – society and space as material, structured phenomena *in themselves*, as encounter/avoidance systems and architecture, i.e., society seen as a spatial phenomenon constituted by bodies arranged in space and time, and architecture as something that is born already social (the fundamental axiom of the theory – Hillier and Hanson 1984). This third

macro-structure is constituted, I submit, by three capitals: 1) *social capital*: systems of encounters/avoidances, actual or virtual, in space and time; and *architectural capital*, constituted by places socially appropriated, formed in turn by 2) *spatial capital*: Coutinho's *end elements*, but now encompassing interior and exterior spaces, and 3) *building capital*: Coutinho's *mean-elements*, encompassing any volumetric element, as the partitions in interior spaces of buildings, or buildings themselves at the larger scale of settlements. As follows is the synthesis of the three capitals, and a summary of the sources behind the taxonomy.

- **Infra-structure of the production of goods and services**
  - ➢ *Economy*
    - ✓ **Economic capital**: production, circulation, distribution, consumption of material goods and services
- **Super-structure of politics and ideology**
  - ➢ *Politics*
    - ✓ **Political capital**: capacity of making decisions, power over Self and others
  - ➢ *Ideology*
    - ✓ **Ideological capital**: theories, practical rules, games, languages ("universals")
    - ✓ **Cultural capital**: values, habits, gestures, tastes, arts ("particulars")
- **Socio-spatial structure**
  - ➢ *Society as artefact*
    - ✓ **Social capital**: systems of encounters/avoidances in space and time
  - ➢ *Artefact as society*
    - ✓ **Architectural capital:** places socially appropriated
      - ○ **Spatial capital:** public spaces of flows, public spaces for stationary people
      - ○ **Building capital**: enclosed realm of internal, controlled spaces

Chart 1. Macro social structures. Capitals. (Source: Author.)

- *Social capital*
  - Systems of encounters/avoidances that are realized in space and time: who? with whom? how many? doing what? where? when? for how long? (Hillier and Hanson)
- *Spatial capital*
  - Spaces for the urban flows (Santos) at the *macro-scale* of the settlement (the *whole*, *global*, Hillier and Hanson), *through-spaces* along which the *economy of movement* is deployed (Hillier and Hanson)
  - Public open spaces (the parts, the *local*, Hillier and Hanson), places for stationary people, of unrestrictive access and prone to improvisation (Coutinho), the *"open fixities"* (Santos)
- *Building capital*
  - The *end-elements* of architecture (Coutinho), internal spaces at the scale of *buildings' interiors*, controlled and partitioned spaces (Hillier and Hanson), thus closed, with restricted access, that imply the referred *liturgy* (Coutinho), the *"closed fixities"* (Santos), unambiguously marked-off from the public realm
  - The *mean-elements* of architecture (Coutinho), types of interior volumetric elements that partition interior spaces, types of the exterior skin that envelopes the *"closed fixities"* (Santos), types of the volumetric features (buildings and other elements) that configure settlements' spatial structure

Social capital refers to encounters/avoidances, actual or virtual, that constitute *society as a spatial artefact* – bodies arranged in space and time – one of the fundamental tenets of SST, but also a concept omnipresent in Bourdieu's oeuvre: the capacity of the subject as a function of his belonging to a network of contacts with relatives, friends, acquaintances and strangers, of all types and for all purposes.

Spatial capital has been referred to in the literature, from inside or outside the ranks of SST. Geographers Rérat and Lees (2011), for example, study spatial capital as related mainly to mobility: "the stitching together of access to various parts of the city at various times of the day" (Rérat and Lees 2011, p. 128). This is similar to the appropriation of the *space of flows* of Santos'. However, while they consider the global level of the city, they leave aside the local level – the *open fixities*, as suggested here.

More akin to SST is the work by Lars Marcus and colleagues (Stale et al. 2005, Marcus 2010), and yet there is a marked difference from the approach submitted here: for them, spatial capital is an attribute of *place* (a "procedure to measure urbanity", the latter understood as accessibility and diversity of facilities within a certain radius); also, a socially diverse borough presents a *single* measure of spatial capital (an attribute of the borough). Here, as in Bourdieu, groups of subjects (social classes or other groups), while having differential access to resources, present their corresponding spatial capital (an attribute of the subjects, a *distinction* among groups). And two

further differences: 1) for them, "facilities" occur in *closed fixities*, and therefore correspond to *building capital* in the taxonomy here, not to spatial capital, whereas, at the same time, 2) *open fixities*, which are *spatial* par excellence, are absent from their repertoire.

Finally, yes, there is an ambiguity by which *building capital* concerns architectural *end-elements* which are… *spatial*, but which do not constitute spatial capital. The specificity of building capital grants edifices the importance they have in the couplet *buildings* x *settlements*, from the foundational ideas of SST: in a nutshell, buildings (and their interior partitioning) embodying social categories, settlements, structuring their relationships. One's own living space, as well as the availability of facilities providing services in daily life (or in special occasions) constitute precious resources of people, therefore deserving a slot of their own in the taxonomy above: *closed fixities* as *building capital.*

The taxonomy presented here is the guide to enquire into the empirical evidence. Each of the categories and sub-categories include several analytical variables by which real phenomena are *described*; these are tools used to *objectively characterise reality*, while, at this point, judgements concerning what is being depicted from the world are suspended. After Bill Hillier, I argue that this is the central aim of Science. (I recall, from our seminars, the emphasis he put in the words "*Science is description*".)

This might sound strange, at its best, or shallow, at its worst. After all, is it not *explaining* phenomena that matters? disclosing the "meaning or significance" (Merriam-Webster 2022), or *implication*, one might add, of things? Daniel Dennett (2017, p. 38-9) suggests the problem is two-fold, including *how come* and *what for* questions: 1) the first involves *causes*, a *narrative process*, a course from *past* to *present*; 2) the second involves *reasons*, *justification* of things, answers to *needs*, a course from *present* to *future*. Also, 1) this is already addressed by *description*, that allows for answering both questions if proper (analytical) tools are employed, and 2) both questions have been handled in slightly different ways in Diagram 2, respectively, in its upper part (*causes*) and in its lower one (*effects*). What shows in the lower part of Diagram 2, i.e., the effects on people of architectural configuration, in various aspects, has been the cornerstone of our research endeavour for decades now.[10]

5 ARCHITECTURAL CODES AS *HABITUS*

Now we come to the *assessment* of places, by the people who inhabit them or by some other procedure: questions like "what is more important?" or "what is good?" were not asked so far. This is the point: to do that we must move from the upper section of Diagram 1 to the lower one – that is, from *Science* to *Ethics*. Yuval Harari comments on this most clearly:

> 'What is more important?' and 'What is good?' (…) are not scientific questions. Science can explain what exists in the world, how things work, and what might be in the future.

> By definition, it has no pretensions to knowing what should be in the future. Only religions and ideologies seek to answer such questions (Harari 2015, p. 273).

Under labels like "religion" and "ideology" Harari is in fact talking about Ethics, which informs our values, choices, desires, tastes etc., and which are neither *true* nor *false*, but historically determined, in space and time, and in constant move. They are constituents of Bourdieu's concept of *habitus* – principles and manners of having, acting, thinking, and feeling that are ways of *distinguishing* social subjects and positioning them in society.

The concept of *codes* in Diagram 1 is like the concept of *habitus*: more specifically, (architectural) codes, as is the case here, are ways of structuring relations between configurations of buildings and cities, on the one hand, and modes of life, on the other. Julienne Hanson has explored the idea in "Two domestic 'space codes' compared" she has written with Bill Hillier (Hanson 1998). These are particular cases of *group codes*, ones that pertain to *social classes*; in that chapter, she and Bill Hillier explore "class codes", namely the "working-class code" and the "middle-class code", as realised in domestic space organisation. However, "group code" in Diagram 1 is a wider concept, encompassing, e.g., modes of (architectural) behaviour pertaining to an urban "tribe", or gender, or age group, as, in the latter case, the study of relations between old age and urban parks in Brasília (Cabral and Holanda 2019). Also, here the concept is widened to include, downward the scale, individual codes, and upward the scale, universal ones. In the first case, personal codes inform ways by which *individual choices* are legitimately taken, concerning, e.g., idiosyncratic decisions of one's design for his own house, as was the case of our family home I designed in Brasília, the permeability structure of which contrasts with both "modernistic codes" of professional designers and "social codes" of middle-class houses in the Capital (Holanda 2021a). Upward the scale, especially in visual perception studies, *universal codes* establish conditions through which we – the human species in general – satisfactorily navigate through architectural spaces, for we detain a *same – universal* – perceptual apparatus (Kohlsdorf and Kohlsdorf 2017).

These codes, as the *habitus*, are constituted by *values* superimposed upon empirical reality, which allow us to be happy or otherwise with the places we live in. But discriminating *description* from *judgement* is particularly problematic in *applied social sciences*, as is the case with Architecture – a discipline *and* a practice. The difficulty surfaces in authors who analyse the status of the knowledge-field and sort out the theoretical production therein, e.g., Pierre Gauthier and Jason Gilliland (2006) and Stephen Marshall (2012), the former focussing on "urban morphology", the latter, on "urban design".

Gauthier and Gilliland (2006) comment on the difficulty of bringing together in a same framework studies in "urban morphology" that come from a variety of different disciplines – architecture, urban planning, geography, history. They then suggest an overarching classification

which encompass diverse contributions along two axes: 1) the *cognitive* x *normative* approaches and 2) the *internalist* x *externalist* ones. A first difference with the view defended here: there is no epistemological difference among "analytical theory" (*cognitive* – "a body of principles put forward to explain a phenomenon") and "normative theories" (*normative* – "a doctrine accompanied by a series of prescriptions"). I submit, "normative theory" is a contradiction in terms, in so far as *norms* are *not* a description of the *world as is*, therefore *cannot* constitute *theory* – the field of Science – but refers to the *world as should be*, informed be values and desires – the field of Ethics. The other axis – *internalist* x *externalist* – suggests theories are distinguishable "between contributions that consider urban form as a relatively independent system, and contributions in which urban form stands as a dependent variable, or passive product of various external determinants", and SST is located in the top corner of *cognitive* (scientific) and *internalist* (autonomous) theories. However, since Bill Hillier's article "The Architecture of the Urban Object" (Hillier 1989) this mechanistic approach has been overcome; architecture is seen as *constitutive* of society, and it is not a matter of "cause" *or* "effect" but of both: Hillier writes about "laws from society to space" *as well as* "laws from space to society", the distinction thus becoming an analytical trick rather than a substantive differentiation in the nature of the object – buildings or settlements. This is why "cause" and "effect" are submitted here in the form of Diagram 2.

Stephen Marshall strides along similar treks. In "Science, pseudo-science and urban design" (Marshall 2012) he acknowledges "urban design" as a "distinct intellectual discipline" and, again, brings together knowledge and practice, in three theoretical instances: "1) insight into how the world works; 2) a stance on how the world ought to be; and 3) a view on how to get from here to there". While discussing criteria for "scientific" qualification of theories, he also leaves almost unnoticed ethical values which ultimately underpin design decisions, except for suggesting that value judgements may be "directly deducible from the scientific evidence" – which, according to the reasoning put forward in this paper, may not.

And yet, theoretical errors may lead to bad practice. It is usual to find architectural critiques of places performed in "moaning-mode" – that laments the situation without considering that places are *social constructs*, that they form the architectural capital which, together with other capitals, constitutes the *habitus.* It is as if simply bad professionals or bad knowledge were the source of bad quality environments. There certainly is incompetence around us, but this is not the crux of the matter. When it comes to the *habitus* both "pedigree" architecture and the social (anonymous) production of buildings and settlements may constitute one and the same architectural paradigm – *formal* or *urbane*, to use my terms. In summary, *paradigm of formality* and *paradigm of urbanity* are socio-spatial concepts I have been working with since my doctoral dissertation (Holanda 1997): 1) *formality* implies large spaces, discontinuities either by large distances and vacant land or by a proliferation of barriers defining non-traversing zones, elaborate and indirect transitions between interior and exterior spaces, specialization of places for certain practices, scarce use of

public spaces in daily life and their occupation only in special circumstances, separation in space and time of diverse subjects; 2) *urbanity* implies the opposite in all scores: a dense and continuous settlement, with direct transitions between inside and outside, permeable and varied urban fabric, public spaces used by many and different people in daily life, in summary, the essential attributes of cities that foster exchange of experience among diverse social subjects and their varied practices.

Now, if we are to leave the moaning-mode and embark on a "critical-mode", we must zoom-out from the environment, and not focus on the environment *per se*, but rather on the *habitus* to which the environment belongs as one of its constitutive parts: what paradigm is being embraced by the social subjects in question, formality or urbanity, or some sort of blend of both? In other words, this is to perform the fundamental axiom of Space Syntax Theory – architecture as a social phenomenon, society as a spatial phenomenon. In the critical-mode we are not simply analysts of an environment, we are critics of society, but focussing in one of the forms it appears to us. This means we must act as the *social subjects* we are, struggling in a social milieu, fighting for a certain *habitus*, identifying our allies as much as our adversaries – and confront them. Otherwise, we run the risk of picking the (ineffective) wrong battles. In the worst scenario, of adopting a naïve stance and preaching in the desert.

6 CONCLUSION

Now, is Space Syntax Theory a *good* theory? Are *urbane* values *true* ones? Here is the rub: again, neither question makes sense.

SST is *revolutionary science* in Thomas Kuhn's (2012) terms, for it has performed a *paradigm shift* by overcoming, in Hillier and Leman's terms (1973), the *man-environment paradigm*, through which architecture and society differ in nature, resulting in unsurmountable difficulties in establishing relations between them; SST is not *normal science*, for it has not simply accumulated evidence to ratify an existing paradigm. There is a growing body of research that certifies as *truthful* many of SST theoretical formulations, with universal validity, as well as, admittedly, formulations that have been *falsified* by evidence – Bill Hillier once observed that the stronger a theory the greater the number of ideas discarded along the way… Then, is this *good* theory, or is it *bad* theory, as according to their critics, who rather pinpoint what SST has left aside than refute its own evidence? (Is it not that only *reality* is *whole*, that all *theories* are necessarily partial, incomplete – *analytical* – by selecting *aspects* of reality that constitute their focus of attention?).

Then, SST is neither good nor bad because this is the wrong yardstick: its formulations have proved *true* (while so far verified by evidence, thus matching *objective reality*) or *false* (while so far refuted by evidence, thus contradicting *objective reality*). This is the field of Science, the field that depicts the world *as is*, depictions which are, of course, by their very nature and by cultural

evolution (Dennett 2017), prone to modification, amelioration, supersession – denial. But they are objectively expressed and objectively testable.

What about *formality* and *urbanity*? Since *The Social Logic of Space* postscript, we can characterise modern urban configurations along two trends – *hard* and *soft* – both meaning that the previous urban condition is under attack, namely, what is classically understood by cities, following the renowned formulation by Louis Wirth (Wirth 1938, Tonkiss 2013): again, settlements that are dense, large, continuous, varied. The contemporary *zeitgeist*, on the contrary, implies the erosion of the city in two ways: 1) *hard*: by creating a plethora of barriers in dense and continuous areas so that fragmented non-trespassing zones, with (few) locals and deserted of strangers, proliferate, and 2) *soft*: by inserting discontinuities and enlarging distances so that a barely recognisable settlement results, full of no-man's land interstices, deserted not only of strangers but of *anyone.* As shown elsewhere (Holanda 2019b), Brasília materialises a perverse blend of both trends by investing progressively in urban enclaves (*hard*) that constitute the second most dispersed city on Earth (*soft*). Hopefully it is becoming clear that such version of the *paradigm of formality* is neither *true* nor *false*, but evaluated as *bad*, if, and only if, one embraces the *values* of the *paradigm of urbanity* (consider that "formalites" – allow me the neologism – not "urbanites", praise the city *as is*). It is therefore a clash in the field of desires, in ways of having, acting, thinking and feeling: the *habitus* – the field of Ethics.

Yes, some speak of the *beauty* of a theory. This might be acceptable in the realm of poetical-metaphorical discourse, but to be rigorous, it is, again, a mistake in keys. This would be a shift toward another dimension of Philosophy – Aesthetics, or part of it, for that matter. As Coutinho (1970) puts it, a *work of art* is not simply a "thing of beauty" (yes, it must be!), that pleases us without practical reasons: rather, the conveyance of a *world view* is a *sine qua non* condition for something to be considered a work of art, because "philosophical systems are also works of art, in the same way that works of art are also philosophies" (Coutinho 1970, p. 82). The Esplanade of Ministries and the wings of the Pilot Plan do not just "please the eye" (they do!): Lucio Costa's Apollonian world view is clearly transmitted through 1) the way he treats topography (the Esplanade is placed on an rampart built 5 metres above the natural ground level); 2) the rigorous symmetry of the two residential wings, 6.2 km in length each; 3) the 250 x 250 m (a square!) modulation of the superblocks; 4) the artificial hill on which he placed the TV Tower, a powerful landmark of his design already present in his first croquis of the Plan, matching the Tower of Congress in symmetrical fashion opposite the urban centre etc. etc. etc.

And finally, the above exemplifies the eventual contradiction between philosophical instances – ethic and aesthetic. No matter how fanatic an urbanite you may be (I am!) and thus condemn (ethically) the formality of the place (I do!), the Esplanade of Ministries will move you (aesthetically) for its *sublime* character because it arouses in you the wonder humans have always felt for such places:

> This is the lesson written into the stones of the desert and the ice fields of the poles. So grandly is it written there that we may come away from such places not crushed but inspired by what lies beyond us, privileged to be subject to such majestic necessities. The sense of awe may even shade into a desire to worship (de Botton 2004).[11]

Is this why Brasília is becoming a peregrination site?

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[1] Lyrics to an aria by Georg Friedrich Händel (HWV 55), supposedly inspired initially by *The tempest* (Shakespeare), and subsequently modified by John Milton and Charles Jennens.
[2] I acknowledge relations between Science and Ethics are controversial. As we shall see, I follow philosopher of mind Daniel Dennett's (2017) and historian Yuval Harari's (2014) viewpoints, both in contrast with, e.g., philosopher Sam Harris' position, who suggests that Science and Ethics are related in a deterministic way – the latter being determined by the former. This suggests a "naturalization" of Ethics, coherent with his denial of "free will" (Harris 2012, and the debate with Richard Dawkins at https://www.youtube.com/watch?v=Mm2Jrr0tRXk&t=3982s). Also, for an interesting conversation on the topic among Daniel Dennett, the theoretical physicist Lawrence Krauss and the philosopher of science Massimo Pigliucci, see https://www.youtube.com/watch?v=9tH3AnYyAI8. However, the theme per se falls beyond the limits of this paper.
[3] Unpublished in this form, but as a preliminary and abridged version in Holanda 2019a.
[4] Inspired by Hillier and Leman's (1974) "four-function model", I have dealt with these aspects of performance since Holanda 1997; this "eight-function model" has been subsequently updated in Holanda 2010, and, more recently, in slightly modified form, in Holanda 2021b. Diagram 2 has not been published before.
[5] First published in Holanda 2010, then in Holanda 2021b, and now in revised form.
[6] For Santos, the city is constituted by "fluxos and fixos", i.e., "flows" and – my choice for a translation – "fixities"; the latter have a correspondence with the "magnets" in transportation studies, i.e., delimited (fixed) areas of the city that attract or generate movement. It suits us here for *fixities* is suggestive of "stationary" or "immovable", or "the quality or state of being fixed or stable" (Merriam-Webster 2022). These ideas derived from Santos have been presented in lives but are submitted in written form here for the first time.
[7] The determination of vehicle or pedestrian flows by the *configuration of the street grid itself* is a well-known contribution of SST (Hillier 1996).
[8] I thus unfold *fixities* in two sub-categories, a distinction which is not in Santos, but one which is suitable for us here.
[9] Since Holanda 2010 I consider the places of natural landscape appropriated by people while scrutable *as architecture.*
[10] I refer to the efforts of the research group *Dimensões morfológicas do processo de urbanização – DIMPU* [*Morphological dimensions of the urbanization process*], of the Faculty of Architecture and Urbanism, University of Brasília, officially registered in the *Directory of Research Groups in Brazil* (CNPQ), continuously active since its foundation in 1986. Besides me, the initial members were Benamy Turkienicz, Gunter Kohlsdorf, Márcio Villas Boas, Maria Elaine Kohlsdorf and Mário Kruger. The ideas presented in this paper partly result from this collaborative endeavour, partly are of my own responsibility – the reader will distinguish them.
[11] I have already quoted these beautiful de Botton's words elsewhere, in a different theoretical context (Holanda 2019b). I apologize for the redundancy.