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Vinicius M. Netto

The Social Fabric of Cities

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The Social Fabric of Cities

> Linking the physical to the social city is the challenge of our times. This is one of the first attempts to systematically do so, and Netto brilliantly succeeds in showing how encounters, segregation, movement and interaction are reflected in our understanding of the form and function of the city.
>
> *Michael Batty, CASA, University College London*

> In our fast-paced, empirically-driven research world, it is a rare treat to come across a theoretical book that merits pause and reflection, especially when written by a young scholar who has had the patience to mature it for a decade before granting it to us. Vinicius M. Netto's meticulously crafted conceptual framework provides us with the tools to rethink some of the fundamental elements of our everyday research and teaching practice: the interscalar and increasingly complex relations between individual and collective bodies and the spaces of place and flow that shape and are shaped by our interactions. Netto offers practical reasons and philosophical ammunition in support of the battle to reclaim the city. This book is an admirable accomplishment.
>
> *Clara Irazábal, Columbia University*

> The city is at the nexus of the socio-economic, technological and cultural networks that are transforming contemporary social life. Vinicius Netto explains why our understanding of this complex process is likely to remain limited so long as the false opposition of materiality and meaning goes inadequately challenged in social theories of the city. His response is an original account of social practice as a communicative act premised on the materiality of urban systems. This highly interdisciplinary and intelligent study comes as a breath of fresh air to urban studies and should challenge entrenched epistemological positions.
>
> *Sam Griffiths, University College London*

Bringing together ideas from the fields of sociology, economics, human geography, ethics, political and communications theory, this book deals with some key subjects in urban design: the multidimensional effects of the spatial form of cities, ways of appropriating urban space, and the different material factors involved in the emergence of social life. It puts forward an innovative conceptual framework to reconsider some fundamental features of city-making as a social process: the place of cities in encounters and communications, in the randomness of events and in the repetition of activities that characterise societies. In doing so, it provides fresh analytical tools and theoretical insights to help advance our understanding of the networks of causalities, contingencies and contexts involved in practices of city-making.

In a systematic attempt to bring urban analysis and research from the social sciences together, the book is organised around three vital yet relatively neglected dimensions in the social and material shaping of cities: (i) Cities as systems of encounter: an approach to urban segregation as segregated networks; (ii) Cities as systems of communication: a view of shared spaces as a means to association and social experience; (iii) Cities as systems of material interaction: explorations on urban form as an effect of interactivity, and interactivity as an effect of form.

Vinicius M. Netto holds a PhD in Advanced Architectural Studies (University College London, UCL), and is currently working as Assistant Professor at Universidade Federal Fluminense (UFF), Rio de Janeiro state, Brazil.

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Vinicius M. Netto

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For Bill

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. . . symbols are required to make traces of what is not given apparent in what is given.

Jürgen Habermas
On the Logic of the Social Sciences
(Polity Press)

. . . to imagine the existence of something still unknown as a way of taking account of the visible. . . . to take the epistemological risks.

Renato Mezan
The Stem and the Branches
(Companhia das Letras)

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Introduction

Threading the social and the spatial

Cities are extraordinary forms of collective life – the means by which we interact in intensities that are perhaps impossible without their particular spatialities. They are an expression of our deeply communicative nature, they inhabit our imagination, and support and expand our capacity for creating and producing ideas, techniques and artefacts; and they do so on an ever-increasing scale – a scale whose limits are unknown. Cities seem to constantly guide and mediate our practices; like mnemonic resources, they connect together acts in the past, present and future. Complex in their formations, they are a unique way of bending the rigid materiality of space and placing it alongside the unpredictable flux of our interactions. They represent the possibility of weaving our acts into highly complex associations, of which we recognise only the part that brings us closer together in our activities, and which disappears in time and space as soon as we act together and move forward. These volatile connections also have their own materialities, which seem to surround and weave together the elusive threads that somehow make collective life possible. While cities have always had relationships with what is outside them, the mesh of relationships between practices, spaces and the technical networks that form them are now so complex that it is more difficult than ever to recognise where they begin and where they end. Cities also mediate our experience of the world and the other. Must of us are born and live immersed in their channels and places, the *topoi* through which we perceive the world. It is a moulding of experience that is so distinct, so particular and so present that even philosophy, whose aim it is to explain human experience, seems to have difficulties in fully recognising it.

The theme of this book concerns the city as the milieu of our social and material reality, and the inner tensions and relations of a social world that increasingly materialises in the form of urban life. All the topics and writings here are based on a single idea: that even amidst the unpredictability and contingencies of this weave of materialities, there are mutual implications between acts and their spaces. In other words, the chapters here seek to capture more than merely coincidental relationships between the complexes of social practice and the form and spatiality of cities. They seek out non-contingent relationships, which are something more than random. They seek out the unlikely implications between things of such different materialities: precisely what it is in space – and its shaping in the form of architectural and urban space – that binds and responds to our practice.

At a time when one part of theory still feels the effects of the post-structuralist critique and another the effects of the paradigm of complexity this intention might sound provocative. Rejection of many approaches in pursuit of these relationships

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brings to mind the present-day significance of what Oscar Wilde wrote about the nineteenth century's dislike of both realism and romanticism: it recalls the rage of Shakespeare's misshapen Caliban *seeing* his face reflected and *not seeing* his face reflected in a mirror.[1] Reluctance to engage in a possible understanding of the ties between our practices and their materiality seems to involve a sense of anxiety, at times in the face of the supposedly impenetrable complexity of the social and material world, and at times in the face of the possibility of *finding* recognisable relationships where there should only be irreducible complexity – a world of events subject only to momentary fragments and eternally distinct interpretations. To paraphrase Lévi-Strauss,[2] a world as 'a kind of space that we would never enter', where understanding would abdicate in favour of the 'sense in no sense'. By rejecting the illusion of universality, theory has also abdicated from the possibility of finding connections and intelligibilities, relationships between things, and everything that cuts across different contexts.

I reject the position of turning away from the endless weave of events and materialities that surround us, together with an exclusive defence of the contingency in which all facts become scattered occurrences. We need both to recognise the presence of the contingent, suppressed by rationalism, and also to refuse to accept it as the unique and ultimate reality, or 'our only way of access to the real and to action'.[3] This book openly seeks to recognise the relationships between our social and material reality and the contingencies contained within them. It involves a theoretical reorientation that seems to have been needed for a long time now: a clear counterpoint to a frequent reluctance to consider the meanings of the relationships between things, between our practices and their material contexts. It seeks a balance between theoretical positions in a way of preserving both the possibility of the intelligibility of the real and the vitality of the unpredictable and weaves of human practice and materialities that are always open. But it recognises that this balance seems yet to be achieved in theory.

The chapters in the book address a series of topics that are present for all of us but are not necessarily consciously evident in our daily lives. Essentially, they concern the place of cities in the flow of practice, the material factors involved in the emergence of social life – in encounters and communications, in the randomness and unpredictable succession of events and in the repetition of institutionalised activities that characterise societies. They also deal with key topics from urban planning and design: the multidimensional implications of the spatial form of cities. They are an attempt to introduce conceptual frameworks aimed at rethinking some fundamental elements of what Fran Tonkiss recently called 'city-making as a social process'.[4] These themes begin with initial theoretical problems such as the approach to elusive segregated networks in the city, expanding into an attempt to understand the material traces of communication, until returning to the condition of bodily-mediated interactions. The relationships between society and space are explored according to three conceptions of the city – each unfolding out of another.

The first part of the book, 'Cities and the fabric of encounter', explores a view of the social constituted as deeply dependent on the spatiality of the encounter, asserted in the works of Anthony Giddens, Bill Hillier and Julienne Hanson, among others. Nevertheless, its aim is to extend the understanding of the importance of co-presence and the movement of bodies in the production of complexes from social practice to the problem of *segregation*. Theory has sustained a continuous attention to the matter

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of segregation, as shown by the number of articles and editions devoted to the topic. Nonetheless, most of these studies seem still limited by a somewhat static and considerably territorial view of segregation, in which the role of space still tends to be confined to physical separation, and segregation still tends to be seen as the social effect of spatial separation. The chapters of this section are concerned with developing an alternative to these predominant views: segregation manifest in the form of restricting contact – a form of social distancing that ultimately operates on and through the trajectories of the body. This restriction would exist in different forms of mobility, in different ways of appropriating the urban space, in the dynamics of encounters and the formation of social networks in the city. These chapters attempt to shift the focus of segregation research towards a problem that cuts across our urban experience: how is it that socially different actors, actively moving and appropriating the city, can do so while remaining practically invisible to each other? And the opposite: how can we experience social segregation in cities that involve high degrees of mobility and complexity? These chapters seek to explain these questions, investigating the problem of segregation as 'making otherness invisible' in the everyday life of cities, a latent segregation in the courses of action and actors socially differentiated by the routes and places of the city. Jointly, these chapters suggest an explanation of segregation as a phenomenon that, by means of spaces, imposes restrictions on *the act itself and the mobility of the actor's body*.

Chapter 1 'Restricting contact' prepares the foundations of an approach to segregation in networks. It critiques the almost static temporality and spatiality of traditional approaches, the almost unconscious replication of a contextual concept of ethnic–racial segregation established in a tradition that can be traced back to the Chicago School in the early twentieth century. This tradition has seen social segregation as the natural consequence of the social division of space – a phenomenon that in fact relates to the possibility of encounter. Adopting an approach to segregation that returns to a concept capable of grasping its more elusive dimension (Linton Freeman's 'restrictions on contact'), this chapter suggests that the answer to the question of how segregation is experienced in contemporary cities implies a role for space that cannot be contained in territorial segregation. It therefore explores the conditions of co-presence and encounter, until finally arriving at the condition of social withdrawal in the everyday life of cities. It explores the shift from the traditional approach to the static segregation of places – where social distance is assumed rather than fully explained – to focus on how social segregation is reproduced through the spatiality of urban trajectories. This chapter considers the forms of mobility associated with different social actors and classes as key factors in the ability to participate in social situations in the city. The approach proposes dismantling the complex web of individual movement and actions that make up the daily dynamics of cities in recognisable, spatially conditioned social networks. It seeks to understand the materialisation of a social topology shaped by *habitus* and the condition of classes by analysing urban trajectories as counterparts of the formation of networks. This approach will suggest an understanding of segregation as the result of a spatiality of collective action involving the presence and absence of socially different actors.

'Segregated networks in the city' concludes this alternative view reclaiming the original idea of segregation as restrictions on contact to recast the spatiality of segregation that is potentially active in the circumstances of social encounters rather than in static territories and patterns of residential location. Seeking out deeper roles

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of space, the second chapter explores the spatial behaviour and forms of mobility of different social groups as networks of appropriation that in turn constitute possibilities of co-presence and absence. This new approach to segregation as a subtle process that operates ultimately through the body is further developed in two empirical studies – the first, assessing the routines of a number of socially different actors in Niterói, in the metropolitan region of Rio de Janeiro; the second, using locational metadata from Twitter users moving around Rio cross-referenced with socio-economic data. Analysis of the geography of potential and improbable encounters and the spatiality of segregated networks seeks to explain the persistent experience of segregation in cities where the other remains virtually unknown – which it terms, after the work of political theorist Iris Marion Young, 'the invisibility of the other'.

□ □ □

'Cities and the fabric of communication', the second part of the book, expands the understanding of societies as systems of encounter towards broader topics concerning society's relationship with space – topics that seem still undervalued in socio-spatial theory: the presence of space in the transition from individual acts to social practice. It moves from the place of space as the situation of co-presence to the place of space in actual interaction. Societies are clearly more than systems of encounter, actors are more than moving entities, and the presence of space in social practice is similarly more complex. As interaction systems, societies emerged through the mediation of languages and the transmission of meanings.[5] But association as a communicative process seems even more elusive than the dynamics of encounter and the latent segregation of moving bodies. How can the presence of space be discerned in the fragile materiality of communication?

Inherent to these ideas are specific views of practice and space. Our practices seem defined by apparent dualities: material and informational, they come into existence through the spatiality of gestures and the bodily performance of acts, and become social through communicative interaction. They constitute a personal level of experience and have implications that relate to other practices and actors, extending beyond our horizon in time and space. Social theorists like Weber, Schütz and Habermas[6] affirm that understanding of our practices, a semantically pre-structured realm consisting of *interpretive* activities, requires access to their *meaning*. I will suggest that such ambiguities also exist in our relation to space, and that the importance of space lies precisely in how such dimensions come into being, and in the passage between them: from situating the bodily and interpretive context of experience, and relating it to broader social landscapes, articulating action across time and space – from interactions performed within a social situation and a particular place to their unfolding into other social situations, agencies and places. The second part of the book pays special attention to the *communicative* ways in which interactions unfold and how they relate to space.

Of course we must be aware of the sceptical view of meaning in some socio-spatial approaches, which seems inspired by a post-structuralist suspicion of metaphysical categories and concepts defined to disclose entities (or what Derrida called 'the stability of presences'). I hope to show that consideration of meaning does not have to imply *reification* of meaning or the neglect of perception, affect and the body. I will argue that this dualism is more epistemological than ontological and can lead

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to another false opposition: a discontinuity between the linguistic and the prelinguistic in experience. Once we break with the usual notions of representational meanings as a key into identities or essences associated with a transcendental subject, we may concentrate on the *relational construction* of meaning – the fact that the meaning of something is defined in relation to other things – transforming the concept into one able to express *inherent relations*, blurring the boundaries between material and immaterial entities, events and processes.

Such an approach directly addresses the immaterial connections between city and society, and explores the meanings and information enacted in space as a part of the fabric of communication. Meaning will be suggested as a way to 'link the material and the immaterial'.[7] At the same time, it seeks to reveal space as a mediation of the linguistic webs of practice – a step towards our associations, the constant construction of connections between our acts. This approach seeks to show that cities and their spaces have a presence that is as important as language in the connectivity of practice. It also seeks to explore a subject that has been similarly little explored: the ways in which language and space are woven together in association.

Chapter 3 'Communication and space' introduces more precisely the place of space in the communicative associations that make up the threads that weave together our acts: the moment when individual acts become *social* practice. My initial argument is that if communication is central to societies as systems of interaction, and if there is indeed a profound relationship between social processes and space, then we can identify a potential role for space in communication. But in order to see such an active presence of *space as a means for the communicative connection of acts* – usually considered as performed through language – we need to understand how it will mediate these acts. In other words, if many of these connections are performed through communication we have to examine whether space has a part to play in communication.

I will argue – supported particularly by the sociologies of Jürgen Habermas and Niklas Luhmann – that the communicative process of association depends on the meanings produced in acts, discourse and context. These will introduce *references inherent* to urban spaces and places – or, more accurately, the meaning of those spaces. I will suggest that meaning is an 'ontological thread' that can bind together the different materialities of acts and spaces. Exploring the relationship between the use of language and the positioning of bodies mediated by meaning, this chapter aims to clarify the relationship between practice and space as a contextual and a referential means of association.

'Urbanity as a dialogical achievement' extends this semantic approach towards an understanding of the city as a structure of social experience. It thus discusses one of the most ambitious (and most diffuse and non-systematic) concepts about this urban condition – the concept of urbanity – based on a proximity between two areas that are still foreign to each other: urban studies and philosophy. Such an approximation is pursued as a way of understanding the specific nature of urban experience in relation to experience as a whole, or to the possibilities of experience in the world. Recalling the common understanding of the concept of urbanity as 'civility through urban contact', I shall unfold a series of definitions of urbanity. Recognising the force of social differentiation, I will begin with the idea of experience of the world mediated by the city inspired by postcolonial historian Dipesh Chakrabarty's fine expression, 'diverse ways of being-in-the-world'[8] and an ethical ideal of the city as

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what Iris Marion Young called 'an openness to unassimilated otherness', suggesting that the experience of urbanity would involve at least three instances: the *phenomenological*, at the moment of 'recognizing the other' in shared experience; the *communicative*, when differences between social groups become permeable through dialogical experiences; and the *ontological*, involving a sense of a penetrable social world where differences are recognisable and accessible in spaces able to converge the socially different.

The chapter argues that recognising a place for the city in our experience of a complex social world means realising how urbanity relates to the 'dilemma of difference', that is, urbanity as an assertion of social diversity and difference, an aspect of identity and group affiliation, and urbanity as a means of avoiding essentialist difference and exclusion. Understanding the relationship between 'difference' and 'urbanities' (decidedly plural) becomes one of the central problems in realising the ethical potential of cities in 'overlapping otherness'. Drawing on distinct political philosophies, I will suggest urbanity as an ethical recognition of the other and its right to occupy space, expressed in a social openness to dialogical constructions capable of transcending absolute difference and the fear of alterity – a concept of urbanity as prospect or ethos of the urban; in short, the *becoming of the urban in an open urbanity*.

'(Re)claiming the city: *polis* and the public sphere' investigates the political implications of the idea of urbanity as coexistence of different socialities. The impression shared by many about the waning of the public sphere is that we appear to be living in times of political indifference. At the same time, we have witnessed movements worldwide to recover the urban space for purposes of political expression, such as the *Indignados* of Plaza del Sol in Madrid, Occupy Wall Street, and the massive demonstrations in Brazil. But how can the exercise of politics be taken beyond occasional demonstrations? Can we see in cities the true meaning of the *polis*, the *locus* of everyday politics? The fifth chapter approaches the city as one of the manifestations of the public sphere and an active means of exercising a 'politics of the everyday', the expression of different opinions and the possibilities for political organisation according to the spontaneous conditions of encounter. It explores the idea that the public space is not just the setting for occasional political action but also that the relationship between public and private, open and architectural spaces is vital for the *constant* possibility of political communication. The projection of the public sphere and political action will have urban conditions.

The possibility of communicative constitution of the public sphere involving urban conditions will carry within it a question: do contemporary cities provide these conditions? Focusing on the Brazilian context, this question will raise the hypothesis that contemporary spaces will be subject to a stage of potentially harmful *micro-rationalisation*, deeper than the more general modernist principles of urban organisation and now with repercussions at the level of architecture. Consideration of theories of modernity via Weber and Habermas, moving on to rationalisation of space, will enable arrival at a series of propositions about the penetration of new forms of rationalisation in practices of city-making in Brazil, and its relation to (i) space as a manifestation of the public sphere, (ii) the weakening of this sphere through the rationalisation of space itself, and (iii) deepening dichotomies between the technical sphere and political power, and between private production and public appropriation.

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Finally, I will discuss how rationalisation of the urban space, planning and production practices have played a part in the dilution of the public sphere – no longer in the form of rational zoning and an obsession with spatial and functional order, but now of spaces rationalised in their microstructure, presenting increasing boundaries between public and private space, between open space and architectural form in Brazilian cities. These recent patterns seem to be associated with a *dilution in the appropriation of the public space* – an urban space that no longer expresses the social diversity of the public sphere, without the full meaning of 'public'. This dilution will contradict the sense of urbanity. Examples will be seen in a brief examination of spaces being produced in the city of Rio de Janeiro, which will lead finally to the important recognition of the need for a review of this process – *reclaiming the city* and an urban spirit, a re-conquest that depends not just on manifestations of a 'return to the public space' but also on recognition of space as a constant manifestation of the public sphere.

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Questioning a particular mode of rationalisation in the form of a self-referential rationality, free from ethical ties, the third part of the book will explore the relationship between social and spatial processes from another position: the material conditions for complex systems of interactions come into existence. The previous section of the book considers cities as communication systems constituted by the immaterial 'reference of acts to space and of space to acts'. But the relationship between act and space, seen as semantic and cognitive, is also fundamentally material – it is mediated by our bodies and gestures in a tangible space. Our associations can only occur if the extensity of space is overcome.[9] I will argue that our actions in the world find another inescapable condition, a material 'adherence of acts to space and of space to acts' at the moment of confronting the extensity of space, felt by the moving body. The centrality of this inescapable condition usually goes unnoticed, precisely as a function of the constant presence of space in our material experience – to paraphrase Wittgenstein on language and belief, our experience is deeply anchored in space, 'so anchored that we cannot touch it'.[10]

The third part of the book, 'Cities and the fabric of material interaction', evokes this condition of social practice by dealing with how the specific materiality of space is part of social practice, moving from consideration of space as part of the spatiality of communication, a space given meaning by our actions, to an explicit engagement with the unique material condition of space. The former is enacted: spaces become associated with and part of our actions and begin to mean such practices to us – when we carry on our daily activities in cities, say. The latter relates to practices and how practices shape the extent and rigidity of space into the specific and complex internal formations of cities. Neither characteristic is particularly favoured in certain strands of socio-spatial thinking, especially in human geography. From one perspective, there is a 'degree of scepticism about the "linguistic turn" in the social sciences and humanities' and theories of meaning, as mentioned above.[11] From another perspective, 'physical space is no longer considered to have any explanatory value in itself'.[12] Well-founded suspicions about spatial determinism, fetishism and representation have led human geography into a deeply distrustful relationship with the physical condition of space – an attitude that 'seems to have made it inattentive

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to the actual, everyday materiality of the places in which people actually dwell' and has ultimately led to 'an enthusiastic embrace of the "immaterial"'.[13]

Nonetheless, there is a growing concern with a 'return to the material' and 'the materialities of the urban' – the necessity of rematerialising human geography.[14] Indeed '[t]here are many materialities at play in the work of human and urban geographers' and theory should 'avoid simple oppositions between the "material" and "nonmaterial" while also restating the importance of understanding the complex spatialities of the urban', as Lathman and McCormack argue.[15] Conditions of the material and social, the physical and informational, are not opposites, neither there should physical space hold primacy over social space or vice-versa. I find it difficult to resist the plea for 'a notion of the material that admits from the very start the presence and importance of the immaterial, not as something that is defined in opposition to the material, but as that which gives it an expressive life and liveliness independent of the human subject', a way of actually theorising these relations closer to Smith's notion of 'deep space' as 'physical extent infused with social intent'[16] Even though this has yet to be fully explained, the immaterial and material properties of space may even be constituted through their very relationship with each other. As Derek Gregory put it, '[the] integration of human and physical systems, I suggest, is not so much an epistemological problem as an ontological one. . . . The two worlds are necessarily connected by social practice.'[17] My interpretation translates the immaterial into semantic associations and the material into spatial formations that become an inherent part of those associations. It will attempt to understand the *ontological presence* of space in association, or how its specific materiality is part of the ways we relate our actions, in the passage from 'practice' to 'social practice'.

Epistemological integration of such systems might benefit from more bridges *connecting socio-spatial theory with theories of the city*, human geography and urban studies. Of course the boundaries between them are blurred (including disciplinary ones), and so they should be – just as there are differences in how the common issues of space and the city are approached within these fields (which contain differences and divisions of their own). In this sense, David Harvey emphasised the need to adopt a theoretical position in relation to the city as either (i) a separate structure with its own laws of inner transformation and construction, or (ii) the expression of a set of social relations that form part of a wider phenomenon or structure.[18] These connections seem to be prevented by the fact that socio-spatial theories tend not to include the complexity of urban formation and transformation, while urban theories tend to omit the connections between the city and social processes. Harvey framed these possibilities as a dilemma, but my view is that we would benefit from reworking certain incompatibilities between theories of the city and theories of society–space relations, drawing from architectural theory, urban studies and economic, urban and human geographies.

An absence of the primacy of social space over material space and vice-versa, and the benefits of a closer connection between different views of the city, suggest the need to address the still poorly understood internal geography of cities, which is a topic that has until recently been undervalued in human geography and to a lesser degree in economic geography. I suggest this for a simple reason: if material space matters in social practice, then the complex spatialities of cities might also be deeply related to social practice – in ways that may go beyond contingency. The third part of the book will explore theories sensitive to differences in spatial formations, found

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in urban studies – while trying to compensate for their limited account of space as an expression of social processes by maintaining a broader emphasis on socio-spatial properties.

This material understanding of space will allow us to address cities as systems of interaction deeply related to urban form – systems also constituted by physical, tactile things that cannot be simply communicated or transmitted, but have to be moved. Most importantly, these chapters argue something that may sound counter-intuitive, even dubious: that the force of the inescapable adherence of act and space leads to the moulding of spaces, generating spatialities so that acts may unfold into new acts by actors in association. Among possible spatialities, I will argue that this adhesion gives forms to cities as ways of bending the extensity of space into formations which, through their channels and open structures, allow the fluidity and intensity of both communicative and material interactions – both the transmission of information and the movement of bodies and objects. But, as a folding of space into urban space, these emerging spatialities ultimately generate new extensities and barriers that also need to be overcome by the practices of interaction.

Starting with a reference to Christopher Alexander's well-known book on the form-creating process, the sixth chapter, 'Notes on the genesis of form', explores the relationship between space and social processes as a relationship between *urban form* and *interaction* – expressed as 'mutual effects'. The term 'effect' is not unproblematic and I shall discuss it accordingly in the third section. But let me provisionally suggest that it might offer a way of addressing latent *tensions* when urban form is enacted; tensions in the very materiality of our acts, gestures and drive to interaction. This chapter starts by proposing that, if we are to fully understand the *effects of urban form* on interactions, we should first attempt to understand *urban form as an effect* of interactions. Looking into the works of Alexander and Hillier, the chapter explores morphological paths that have historically defined the spatial forms that we now recognise as the heterogeneous formations of cities. It examines elementary processes of city-making arising out of the material requirements of interactivity, such as the aggregation of buildings as a way of generalising the proximity of actors and intensifying co-presence, bodily mobility and interaction. The examination of the spatial conditions for 'interactivity', the drive to interaction, will lead to a series of hypotheses about how spatialities emerge and why they acquire recognisable morphogenetic structures that, from many possible paths, follow archetypal directions, some of which have been established during the existence of cities over thousands of years, while others are more recent. An approach to urban form as an effect of interactivity will allow closer contact with the place where this fundamental material condition comes into being, in the relationship between our actions, bodies and spaces.

Chapter 7 'The social effects of architecture' continues the investigation of urban form as means for realisation of practice inverting the key question of the previous chapter. Since the seminal work of Jacobs, one of the most emphasised – and least closely examined – notions in urban design and theory is the role of architectural form in the social life of public spaces and in the vitality of neighbourhoods. Can architecture really affect its urban surroundings? Could different architectural forms have different effects on what occurs in public spaces? Starting out by asking what kinds of effects architecture might have, the seventh chapter critiques the theory and practice of architecture's fixation on aesthetic effects and its customary reduction of the human to a visual subject and of the wealth of social action to the idea of

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'function'. Departing from the implications of urban form pioneered by Martin and March, this chapter explores quite distinct theoretical traditions such as phenomenology and spatial economics to investigate the relationship between architecture and local practices as a material relationship between built forms experienced by the body itself, in an effort to act and interact. It addresses the great difficulty of objectifying these effects, particularly in light of distinct contexts and the multiple forms of relationships between the city and the social.

The chapter attempts to find a proximity – difficult but necessary – between the development of *theory* and *methods* that allow understanding of the questions at hand, especially once they involve the problems and challenges in contemporary cities. Any apprehension about reduction of the meaningful and experiential to the physical, and the rejection of everything that is not visible and measurable as non-existent or irrelevant, is of course justified. Nevertheless, these epistemological concerns have made it difficult to realise that there are phenomena, including urban phenomena, where the problem of *intensity* matters and where the problem of relations becomes complex – when aspects, entities or events affect others in webs of relationships and on scales that are often impossible for us to recognise and map discursively. The material properties of space, which should not be ignored if we are to understand its richness and the extent of its presence in social life, pose enormous difficulties for discursive understanding.

This does not mean that discursive language should be discarded as out of tune, which would in fact be a mistake in the opposite direction. Instead, a mixed method has been advocated: 'there is no fundamental clash between the purposes and capacities of qualitative and quantitative methods or data. What clash there is concerns the primacy of emphasis on verification or generation of theory.'[19] In this sense, I agree with the need to 'reconcile theoretical and empirical research' and with Andrew Sayer's position that 'methods have to be appropriate to their objects' in a reflexive relationship between theory and experience.[20] One way of creating references to such elusive relationships as 'candidates for existence' is abstraction, a way of proposing theoretical ideas for which there is still no empirical content.[21] Their disclosure requires progressive, reflexive and iterative abstraction, and epistemologies that can recognise entities of an elusive nature, immersed in contingent and non-contingent relationships – not all causally unrelated.[22] Finally, such epistemologies allow references to be suggested as hypotheses concerning those 'candidates for existence', facing the risks of bias and circularity stemming from theory-laden experiences, of course.

Exploring these possibilities, the seventh chapter introduces an approach that attempts to grasp traces of the elusive effects of built form and distinguish them from other urban forces at play, as a way of verifying their existence and extent. It presents this approach in a large-scale empirical study in the city of Rio de Janeiro. This study shows consistent relationships between architectural morphologies and social factors such as the intensity of pedestrian movement, the presence of interacting groups in the public space, commercial activities at street level and the diversity of urban activity itself. Our findings suggest a *dilution of the appropriation of the public space and the local economy* observed in areas where a particular architectural model has been replicated – worrying implications from the predominant real-estate activity in Brazilian cities, and possibly in other regions. The chapter discusses the possibility of identifying causal relationships, and develops the foundations of a probabilistic

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theory of the social effects of architecture, in an effort to find a more precise answer to a leading question in the 'urban imagination': how important is architecture for urban and social life?

'The city as result: unintended consequences of architectural choices', the eighth and final chapter, proposes that some of the greatest challenges faced by cities involve consequences that emerge silently from local actions and interventions. As local cumulative effects, they might amount to endemic problems with effects ranging from city form to more elusive social, microeconomic and energy-demand performances. Using Thomas Schelling's insights into individual choices and large-scale unintended consequences, the eighth chapter examines processes of city-making as the projection of individually driven market forces, normative policies and a non-systemic view of the effects of urban and architectural form. Identifying the emergence of a number of Schelling-type urban events in Brazil, such as patchwork-like street networks and informal real-estate markets, this chapter focuses on a radical example: the chain of silent implications stemming from fixation on a particular building typology, leading to the patterning of fragmented urban landscapes and the emergence of urban pathologies. Given the severity of architectural choices that shape space and result in the city, the chapter concludes by discussing the limits between the practices of different social fields engaged in urban planning and design.

□ □ □

These forays into different aspects – the sociological and ontological, political and ethical, economic and normative, and their materialities – point towards a possible conclusion that will merit further discussion. We will see there to be an intriguing and vital convergence when considering the production of forms of encounter and interaction, recognition of identities and knowledge of the complexity of the social world. The following chapters will also suggest that this intriguing convergence of the vital aspects of social practice does not occur in just any kind of space. It involves material expression that will take a number of forms – no model or ideal, but certain material conditions. We will see that *space matters*.

□ □ □

Concluding this introduction, the approach unfolds into the three parts that structure this book and can be summarised as follows:

The first part concerns the relationship between social practice and space mediated by the urban trajectories of the body, considering space as able both to support our recurrent movements and to produce the necessary randomness for 'cities as systems of encounter'.

The second part concerns the relationship between social practice and space mediated by meanings, considering the urban space as a referential fabric of practice in 'cities as systems of communication'.

The third part concerns the relationship between social practice and space mediated by the extensities of the body and space itself, considering urban space as bending to support and express the fluidity and complexities of social practice in 'cities as systems of material interaction'.

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These are the subjects and their interconnections. Underlying them, however, is a deeper subject that binds them together. I think that this book really deals with the beauty of *an improbable relation* – a relation between things whose natures are completely different. Our acts and experiences are capable, in their apparent fragility, of moulding the rigid materiality of space, extended into forms that we call 'architecture' and 'city' – forms that become part of the unpredictable occurrence of practice. The real theme of this book is the improbable connection between the elusiveness of dizzyingly successive acts and encounters in the time of the city, which constitute what we call 'society', and the perennial tangibility of their spatialities, or so they seem to our senses. My aim is to grasp traces of this connection in different ways, traces interpreted and recreated through signs and through theory. Here we come up against an initial limitation: the weave of movements of impression, thought and word that make up theory, towards what comes over as mysterious. The partial and linear characteristics of these movements condemn efforts at knowing to *recognition only of traces of that fleeting relation.* I wrote each chapter never fully understanding that relation; never having grasped its ineffability; after all, how can one grasp the improbable? I wrote driven by the strangeness of a relation that constitutes the fabric of our experience and which allows us to live socially. I accept that the effort is destined to remain incomplete.

Still, this is a book of theory. As such, it does not evade a propositional approach: it seeks to reaffirm the role of theory in a context that needs practices that are more informed and aware, while seeking to assert the place of the city in a changing society; reaffirming the role of theory as a way of addressing the existence of something still unknown to us, and going in search of that 'something' – with an open willingness to 'take epistemological risks'.[23]

It also includes an implicit call for overcoming dichotomies that have imposed severe limits on the expansion of knowledge about the social and material world – dichotomies coming from the field of epistemology, and not the ontology of the world as it is lived. At the start of this introduction I mentioned my intention of breaking away from the apprehension over looking for the 'more than contingent', the search for threads of potentially active causalities in the fabric of the real. If our understandings of the social and material world reveal discord and incompatibilities, the problem is certainly the state of our knowledge, and the dead ends that our tunnel-like epistemologies might lead us to at times. As briefly discussed above, other dichotomies are active, such as those that separate different languages – from discourse to the mathematical interpretation of phenomena, or the difference between interpretive and explanatory approaches, or between qualitative and quantitative approaches.

This is reminiscent of Harvey's observations about the difficulties of finding an appropriate language for discussing spatial form and social process simultaneously ('Such a language does not exist').[24] Perhaps we need entirely new languages – and perhaps entirely new languages could be invented, if we searched for ontological continuities instead of conforming to epistemological incompatibilities posed by theoretical tradition. For more than one reason, I believe that future developments in theory would benefit from a convergence of strengths from different theoretical achievements – a problem not unconnected to the question of disciplinary boundaries between urban studies and urban, economic and human geographies – perhaps overcoming key incompatibilities between theories of the city and theories of society–space

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relations, or between views of the city as a self-contained structure, and the city as the expression of broader social and material processes – breaking free from what van der Leuuw and McGlade call 'epistemological purity'.[25]

Finally, I see this book as a collection of journeys along theoretical paths that can in time be further explored. But these chapters will not, even jointly, provide an integrated approach to the city or a theory of society–space relations. They will primarily form a range of ideas about these relations. Doubtless someone reading the chapters in this volume will say that the relationship between city and society escapes all of them at its core, and as a whole. I would not disagree. None of the chapters will seek to grasp this relationship as a whole, but instead will present glimpses, with aspects that in some way complement each other. They are part of my progressive contact with themes and theories of the social and the urban. They are *approximations*.

Notes

1 'The nineteenth-century dislike of Realism is the rage of Caliban seeing his own face in a glass. The nineteenth-century dislike of Romanticism is the rage of Caliban not seeing his own face in a glass.' In the preface to *The Picture of Dorian Gray*. Caliban is the misshapen character in Shakespeare's *The Tempest*.
2 See Lévi-Strauss (2008).
3 I recall the words of the Brazilian philosopher Marilena Chauí on 'the contingency and dispersion of events' (Chauí, 2006:21).
4 See Tonkiss (2013:1).
5 I use here Luhmann's (1995) definition of communication as transmission and understanding of meaning.
6 There are different traditions stemming from Weber (1978), e.g. Schütz (1972); Schütz and Luckmann (1973), Habermas (1984, 1987, 1988) and Luhmann (1995).
7 Lees (2002:109).
8 See Chakrabarty (2009:21; 241).
9 Here recalling Hillier and Hanson (1984).
10 Wittgenstein's original phrase is '[Belief] is anchored in all my *questions and answers*, so anchored that I cannot touch it' (1969, §103).
11 Thrift (1996:7).
12 Westin (2014:148).
13 Latham and McCormack (2004:703).
14 See Philo (2000), Lees (2002) and Latham and McCormack (2004).
15 Latham and McCormack (2004:703).
16 Latham and McCormack (2004:703), and Smith in Gregory (1994:34), respectively.
17 Gregory (1978:75).
18 Harvey (1973:304); see Netto (2016b).
19 Glaser and Strauss (1967:17).
20 Yeung (1997:70), and Sayer (2000:28), respectively.
21 See Gregory (1978) and Mezan (2014).
22 See Yeung (1997) and Sayer (1992).
23 Mezan (2014:481).
24 Harvey (1973:46; 11–19; 22–37; 304).
25 See van der Leuuw and McGlade (1997:3); cf. Westin (2014); see Netto (2016b).

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DESIGN AND THE BUILT ENVIRONMENT SERIES
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'Linking the physical to the social city is the challenge of our times. This is one of the first attempts to systematically do so, and Netto brilliantly succeeds in showing how encounters, segregation, movement and interaction are reflected in our understanding of the form and function of the city.'
Michael Batty, CASA, University College London

'In our fast-paced, empirically-driven research world, it is a rare treat to come across a theoretical book that merits pause and reflection, especially when written by a young scholar who has had the patience to mature it for a decade before granting it to us. Vinicius M. Netto's meticulously crafted conceptual framework provides us with the tools to rethink some of the fundamental elements of our everyday research and teaching practice: the interscalar and increasingly complex relations between individual and collective bodies and the spaces of place and flow that shape and are shaped by our interactions. Netto offers practical reasons and philosophical ammunition in support of the battle to reclaim the city. This book is an admirable accomplishment.'
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Bringing together ideas from the fields of sociology, economics, human geography, ethics, political and communications theory, this book deals with some key subjects in urban design: the multidimensional effects of the spatial form of cities, ways of appropriating urban space, and the different material factors involved in the emergence of social life. It puts forward an innovative conceptual framework to reconsider some fundamental features of city-making as a social process: the place of cities in encounters and communications, in the randomness of events and in the repetition of activities that characterise societies. In doing so, it provides fresh analytical tools and theoretical insights to help advance our understanding of the networks of causalities, contingencies and contexts involved in practices of city-making.

In a systematic attempt to bring urban analysis and research from the social sciences together, the book is organised around three vital yet relatively neglected dimensions in the social and material shaping of cities: (i) Cities as systems of encounter: an approach to urban segregation as segregated networks; (ii) Cities as systems of communication: a view of shared spaces as a means to association and social experience; (iii) Cities as systems of material interaction: explorations on urban form as an effect of interactivity, and interactivity as an effect of form.

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