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# DIGITAL CITIES

The Interdisciplinary  
Future of the Urban  
Geo-Humanities

**Benjamin Fraser**





**Digital Cities**

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# Digital Cities: The Interdisciplinary Future of the Urban Geo-Humanities

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Research takes strange turns – one idea leads to the next, and not always in the direction suggested by time’s flow or the interests of teleological thinking. Reading Gilles Deleuze, I found Henri Bergson; reading David Harvey, I found Henri Lefebvre; and somehow by delving into the historical, methodological and theoretical layers of a future Urban Studies, I found the past and current strata of the Digital Social Sciences and Humanities. Another way to say this is that the sheets of past contain the future. And many times in embracing the future, we end up in a place more frustratingly familiar than we had expected – as is dramatized in this mid-length Palgrave Macmillan book project’s Epilogue, which is conceived as an homage to Italo Calvino’s work *Invisible Cities*.

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# Introduction

*Abstract: The Introduction to Digital Cities concisely integrates the three components central to the urban geo-humanities that are so often treated in isolation from one another: first, the interdisciplinary nature of the city as an object of inquiry; second, the position taken by various methodological approaches to the urban phenomenon relative to overlapping disciplinary traditions; and third, a theoretical understanding of the interdisciplinary structure and conception of current and future digital city projects. This triple articulation of an interdisciplinary object-method-theory is the expression of a single argument.*

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The end goal of *Digital Cities* is to chart a path toward what I am calling the “urban geo-humanities.” I employ this term as a reference to a specific and concertedly interdisciplinary area of research, one that enjoys a certain currency within and across fields that go by the names of the digital humanities, the geo-humanities, cultural studies and urban studies. In truth, of course, each of these growing fields pulls from some mixture of the sciences, the social sciences and the humanities. There are increasing numbers of existing digital city projects that might be classified within the urban geo-humanities, but there is not yet a concise or coherent theory that explores what the urban geo-humanities are, or for that matter, what form of urban thinking they represent. Nor has there appeared, yet, a full exploration of the interdisciplinary challenges that this area presents for researchers.

Toward that end, this mid-length book project concisely integrates the three components central to the urban geo-humanities that are so often treated in isolation from one another: first, the interdisciplinary nature of the city as an object of inquiry; second, the position taken by various methodological approaches to the urban phenomenon relative to overlapping disciplinary traditions; and third, a theoretical understanding of the interdisciplinary structure and conception of current and future digital city projects. This triple articulation of an interdisciplinary object-method-theory is the expression of a single argument. That is, the argument of this book has been constructed in such a way that the theory of digital cities outlined in Chapter 3 builds from discussions of the urban as an object of investigation in Chapter 1, and from explorations of interdisciplinary method in Chapter 2.

We might begin with the difficult matter of defining what a city is, which has long been one of the key problems of urban scholarship. In one way or another, modern studies of the subject have tended to repeat the same hallmark insight. This insight holds that the very term *city* is a simple label hiding a much more complicated reality. Our understanding of cities has undoubtedly changed since discourses of urban modernity began to take hold in the collective imaginaries of the nineteenth century. But in this single and general sense, at least, things arguably remain the same: to speak of the city is to speak of the material conditions of our modern lives; it is simultaneously to speak of both our collective social aspirations and our admittedly social failures. Whether we refer to the city as a center or rather a system of power, as a dwelling place or a workplace, a force, vantage point or an image, a node for production,

consumption, transportation and reproduction, an abstract idea or an outward expression of ourselves... in each and every case, the intention to study the urban prompts us to study humanity itself, as a whole.

One can trace this premise throughout key thinkers of the previous centuries with ease. From poet Charles Baudelaire's urban sensibilities of the nineteenth century to Walter Benjamin's sensory take in the early twentieth, the city is not a simple object but instead a subjective experience of flows and sensations, a movement composed of the comings and goings of individual pedestrians and the transience of crowds.<sup>1</sup> In 1938, Louis Wirth of the Chicago School of Urban Sociology writes that the city draws "the most remote parts of the world into its orbit."<sup>2</sup> Famed anti-urbanist Jane Jacobs calls cities "problems in complexity, like the life sciences" in her 1961 salvo *The Death and Life of Great American Cities*.<sup>3</sup> From the 1930s to the 1960s, urban historian Lewis Mumford sustains that the city is "a theater of social action."<sup>4</sup> Marxist thinker David Harvey's work, particularly from the 1980s, 1990s and 2000s, emphasizes the urban as a process.<sup>5</sup> Questions of ownership ("But whose city? And whose culture?") – rather than the matter of definition – are what drive Sharon Zukin's synthesis of urban culture and political economy in *The Cultures of Cities* from 1995.<sup>6</sup> And throughout the 1990s, 2000s and 2010s, Saskia Sassen asks provocative questions of the links between power and technology in what we commonly call global cities.<sup>7</sup> These are merely examples, of course, which have been given the attention they each deserve elsewhere, but together they highlight the way in which we must think the city in broad terms.

A provisional and necessarily flawed, commonsensical position on the city suggests to us either that it is a group of people, or that it consists of a grouping of buildings. This is a false dichotomy. Either way we reduce the city to being a thing in the simple sense. But the city is not a simple object. Instead, it is a point of entry into a vast landscape of human activities. These activities are simultaneously social, economic, political, philosophical and cultural even though they may be more traditionally claimed as the object of study of particular and specialized disciplines.

To wit, the discipline of architecture, to the degree that it functions in partnership with urban planning, tends to emphasize the built environment of the city over the people who make it up. The disciplines of sociology, geography and anthropology provide quite different pictures of the city, depending on whether the research conducted in each of these areas is quantitative or qualitative. Qualitative studies

often emphasize the human experience of the city, whereas quantitative work tends to look at the city as a set of relatively static structures or institutions. Traditional economics largely deals with the city merely as the circumstantial context or simple background for economic activity that might just as well take place anywhere. And in the main, research on artistic, cultural or literary production in urban contexts takes place in relative isolation from these other disciplines. Even those thinkers who have touted the interdisciplinary character of research into cities, dating back over a century, have tended to be assimilated into particular disciplinary traditions. Increasingly, however, academics researching the urban phenomenon from both the humanities and the social sciences are making more of an effort to understand the interdisciplinary complexity of the city.

Whether the readers of *Digital Cities* are practicing scholars, undergraduate or graduate students, professionals or autodidacts, the central premise motivating this book project must be made clear from the outset. It is this: *the city is not a simple thing but a complex process*. This premise is simple enough, but it is the resonance of this premise throughout a wide variety of (inter)disciplinary discourses on the city that is this book's real subject. The Arts, Humanities and Social Sciences tend to adapt this general premise in their own way when approaching the topic of cities. Even so, contact between each of these areas has been and continues to be insufficient. Individual disciplines taking on the urban phenomenon persist in a state of relative isolation to one another despite having a shared subject matter. Thus, in order to understand the urban phenomenon as a process, we must consider three levels simultaneously. At the object level, the city is constructed and refashioned over time as part of a dialectical process. At the level of method, the urban is again constructed and refashioned over time through the set of interests particular to one or more given disciplines. And at the level of theory, there is reason to consider the urban phenomenon as a layered process, one that results from the interconnection of activities that are analytically distinct even if they are closely related in practice.

The notion of process is what unites these three levels. Whether considered as a simple object, approached from a disciplinary method or constructed and dissected according to a given theory, there is a need for thought to activate and mobilize the urban phenomenon. The city is not a thing but instead a process. It is admittedly within the city that we live, work and create. Yet there is a reciprocal element to our relationship

with the city, such that in our task to re-create the city, we re-create ourselves, and through our own self-production we at once reproduce the city. The city is thus not a product but instead an ongoing activity, a constant human reproduction; it is an unending oscillation between thinking and thing; it is a union of form, idea and experience that, as a process, can only be conceived, perceived, constructed, lived and understood through time.

As a way of introducing this simple idea that the city is a process to general readers – along with its complex implications – I turn to a Cuban-born Italian novelist Italo Calvino. Calvino's *Invisible Cities* (1972) is a wonderful collection of concise travelogue-style narrations that, taken together, assemble a more complex narrative expressing the forms, dangers and possibilities of the urban phenomenon.<sup>8</sup> Among the book's many intriguing passages is this one, quite relevant for our purposes:

The man who is traveling and does not yet know the city awaiting him along his route wonders what the palace will be like, the barracks, the mill, the theater, the bazaar. In every city of the empire every building is different and set in a different order: but as soon as the stranger arrives at the unknown city and his eye penetrates the pine cone of pagodas and garrets and haymows, following the scrawl of canals, gardens, rubbish heaps, he immediately distinguishes which are the princes' palaces, the high priests' temples, the tavern, the prison, the slum. This – some say – confirms the hypothesis that each man bears in his mind a city made only of differences, a city without figures and without form, and the individual cities fill it up.<sup>9</sup>

In the twenty-first century, it should be easy enough to recognize that the notion that each of us bears a city in our minds is not hypothesis but fact. This much is confirmed as a general principle – the city is an image, an idea, as well as a physical reality. It matters not the particular academic discipline through which one wishes to confirm this principle. In both its history and current practice, urban planning itself provides ample evidence, where the city has been largely seen as a canvas where figures and ideas take on concrete form. But the city is the subject, too, of research in many social sciences: sociology, geography, anthropology and psychology, for example. Where these disciplines investigate the urban phenomenon, they regularly frame it as a uniquely human production, and one whose meaning goes beyond the mere existence of static structures. It is undeniable that there are human values encoded into the production of cities – values that are cultural, social, political, economic and philosophical. As the quotation from Calvino's work also

suggests, cities are exercises in organized complexity whose concrete manifestations may vary according to all manner of variables. The social sciences are well positioned to understand a number of these variables, but they are not sufficient to make sense of the urban phenomenon as a whole, as a totality shaped by both material and immaterial forces, as both a thing and an idea.

From this perspective, we need to internalize that work on cities is also, always, already, informed by the humanities. To begin, philosophy may not be sufficient to understand cities, but it is a crucial discourse implicitly and explicitly informing urban scholarship from other areas.<sup>10</sup> There are philosophical understandings of the relationship between physical and mental realities that find their way into urban theory whether it is written from the disciplinary positioning of sociology, geography, anthropology or psychology, for example. At the same time, as the city is an image and idea, as well as a physical reality, it must be recognized that this image and this idea are reflected and expressed in, mediated by and historically shaped through material conditions and cultural production. This is so whether we are talking about painting, novels, films, music and so on;<sup>11</sup> and also whether these artistic products intentionally represent the urban environment or whether the latter's effects or influence are merely implicit within them. In every case, the ways that notions of structure and difference play out in urban environments are the product of complex and ongoing negotiations. These negotiations include how we think about the city at numerous scales – from the global to the local, and especially the personal. Humans have created cities in their image, but cities have also molded humankind in theirs; and our urban cultural production is a two-way street. Through our individual and collective engagements with art, for example, we routinely naturalize and also potentially contest or even provide alternative ideas about the city's past, present and future.<sup>12</sup>

Moreover, the increasing prevalence and power of digital technologies and digital media in urban environments requires that we identify new ways of fusing humanities and social science work on the urban phenomenon.<sup>13</sup> We find ourselves at a crucial moment in time, where the term “digital cities” holds many possibilities and perhaps also more than a few dangers. This term may refer to parallel technological cities coexisting with the built and imagined cities in which we live and work; or else it may refer to new dimensions of existing cities, which may either be accessible to all or else instead restricted to a select few. Like

the traveler from the aforementioned segment of Calvino's work, which I paraphrase and adapt here, *we do not yet know the digital cities awaiting us along our route*. As it is with Calvino's traveler, there is a sense of wonder that pervades contemporary urban thinking – in particular, wonder surrounding the relationship between visible and invisible cities, cities of concrete and steel on one hand, and cities of the mind on the other. In wondering what the built environment of digital cities will be like we thus ponder the connections between political, social and economic power; technology and culture; art, work and everyday life. And we must admit that, whatever forms they may take, digital cities will necessarily bring new meaning to the notion of urban spectacle.<sup>14</sup>

One thing is certain: this urban spectacle is only decipherable to the degree that we employ an interdisciplinary method to make sense of it. The purpose of this mid-length book project is thus to chart the rise of an interdisciplinary understanding of the city, explore its still largely insufficient presence within current disciplinary contexts and propel this notion forward into a social and scholarly future that will be increasingly articulated with the rise of digital research paradigms. It seeks to synthesize the connections between visible and invisible cities, material and immaterial cities, as they have been imagined in the modern age. This is not a comprehensive or encyclopedic work – its goal, rather, is to illustrate a general principle of urban thinking as it has unfolded over the late nineteenth, twentieth and early-twenty-first centuries. To accomplish this goal, its three parts engage select thinkers whose wide-ranging thought best captures the interdisciplinary character of the urban phenomenon.

## Outline of the present project

This concise Palgrave Pivot project is intended to reflect the increasing disciplinary awareness of the interdisciplinarity of the urban phenomenon. It is necessary to keep in mind that peer-reviewed venues dedicated to bridging the humanities and the social sciences such as the *Journal of Urban Cultural Studies* (first issue in 2014) and *Geo-Humanities* (first call for editors in 2014) are still relatively recent ventures. My hope is that this intriguing mid-length format will provide an accessible primer for those interested in the digital future of the urban geo-humanities, whether casual readers, active scholars, graduate students, or – and



especially – undergraduate students, from a cross-section of disciplinary traditions. Because writing for multiple audiences can be a challenge, I have chosen to keep the body-text as clean as possible and to provide supplementary and extensive endnotes that are more appropriate for advanced readers.

The book consists of three parts: in point of fact, I first conceived of Chapter 3: Toward a Theory of *Digital Cities*, and then wrote Chapter 1: Layers of the Interdisciplinary City and Chapter 2: Disciplinary/Digital Debates and the Urban Phenomenon as I tried to think through what basic knowledge readers would need to have digested in order to make sense of that theoretical chapter. The road charted by this book, then, has been constructed to help readers reach a specific destination, and as such, it progresses from history to academic practice, and finally to theoretical concerns. It is written with a broad audience in mind that includes undergraduates, graduate students and scholars from both humanities and social science fields.

With this in mind, Chapter 1: Layers of the Interdisciplinary City works through the attempts, mostly throughout the twentieth century, to provide a complex definition of the city itself. A portion of this intellectual journey relies on brief contacts with work by a range of thinkers – for example. Charles Baudelaire, Walter Benjamin, Louis Wirth, Lewis Mumford, Jane Jacobs, David Harvey, Sharon Zukin and Saskia Sassen – emphasizing ideas over individual people. Another portion touts the crucial role played by art in the necessarily social activity of reimagining and reproducing cities. The urban form as reproduced (either implicitly or explicitly) in paintings, poetry, literature, film and other artistic products is also a crucial part of the contemporary urban experience, and the uninitiated reader should encounter few challenges in attempting to learn more about urban cultural studies through published studies – journal articles and books. The throughway of Chapter 1 is constituted by the complex negotiations between urban space and urban time that appear and resurface in discourse on the city, between subjective experience and sensations on one hand and objective material conditions on the other. The definition that emerges is a nuanced one: the city is both a thing and a layered, interdisciplinary concept. In this sense, it is part material and part immaterial.

With this definition in mind, Chapter 2: Disciplinary/Digital Debates and the Urban Phenomenon shifts from a focus on defining of the city toward seeing how intellectual knowledge has become fragmented across

particular disciplinary frameworks. These disciplinary frameworks ultimately shape how the city is viewed as a particular kind of thing, or a particular kind of concept – and sometimes both. Attention is given to the increasing interdisciplinarity of humanities and social science research in general, before addressing the interdisciplinary challenges facing digital work throughout the second half of the twentieth century and into the twenty-first. The challenges of integrating disciplines can be understood by looking at two particular moments. First, the Snow-Leavis controversy of the early 1960s and, second, the origins of the digital humanities and their contemporary evolution. Ultimately, this part of the book turns increasingly toward the interdisciplinary nature of the urban phenomenon in particular. The work of Henri Lefebvre is particularly well suited for this task given the interlinked role of knowledge, everyday life, space and time and in the French thinker's approach to the urban phenomenon. Thus, the final section of this chapter returns to Lefebvre's insistence that the complexity of the city must be understood from an interdisciplinary perspective that also recognizes the value of literature and poetry, for example, among other humanities and social science disciplines in understanding the urban phenomenon.

Chapter 3: *Toward a Theory of Digital Cities* articulates how thick mapping of urban areas through digital projects realizes theoretical insights on the interdisciplinarity of the urban phenomenon in concrete ways. Although elsewhere I have published somewhat extensively on the interdisciplinary nature, value and potential of Lefebvre's work, here I focus on the resonance of this theoretical corpus with the notion of layers of the urban as a conceptual tool.<sup>15</sup> Discussion builds from Henri Lefebvre's work on the levels (and dimensions) of the urban to re-incorporate the urban temporality at the heart of the urban experience. Here the digital humanist concepts of thick mapping and deep maps – as explored in a number of recent laudable and high-profile publications – are interrogated for both their interdisciplinary bias and their potential to think more broadly about cities. In this way, the theory of digital cities returns the twenty-first-century city to its roots in nineteenth-century urban modernity and brings this Palgrave Pivot project full circle.

Ultimately, *Digital Cities* signals a novel and important way of moving forward into a new and more thoroughly interdisciplinary terrain. This scholarly landscape potentially brings cultural products such as literature, film, popular music, graphic novels and more together with various strains of urban studies in order to think the city from perspectives that

are simultaneously quantitative and qualitative.<sup>16</sup> The resulting take on the urban phenomenon recognizes the material and immaterial components of its ongoing reproduction and contextualizes the rise of digital practices and material forms within a long historical tradition of thinking the city through and beyond other cultural forms.

The concise epilogue is offered as an inadequate tribute and as a companion vignette to those included in Italo Calvino's *Invisible Cities*.<sup>17</sup> Here, the city of Alif is one of many "Bridged Cities" in whose creation, rise and fall can be seen metaphorically the ontological primacy of urban totality despite the analytical designs of urban planning, the false nature and the challenges of the disciplinary schisms and syntheses discussed throughout this book, and perhaps also the hollow ring of some of the triumphalist rhetoric and methodological novelty promised by digital work. In the end, if *Digital Cities* are the future of the urban geo-humanities, they do not signal a break with previous investigations into the cultures of cities, but instead articulate a collective project in which the contradictory insufficiencies and potentialities of previous disciplinary work on the urban phenomenon still persist.

In sum, this is not a new page in the history of work on cities, so much as it is a new opportunity to engage with a strong interdisciplinary tradition that has been too often simplified in isolated disciplinary approaches. If done right, the creation of digital cities – as a specific form of digital humanities project – can render the interdisciplinarity of the urban phenomenon visible and concrete. In this concise book project, I hope to show merely why this is an appropriate and necessary move.

## Notes

- 1 The canonical starting points here are Baudelaire's prose poem "The Crowd" (see Baudelaire's *My Heart Laid Bare*, pp. 133–34 and *The Prose Poems and La Fanfarlo*); Benjamin's *The Arcades Project*.
- 2 Wirth, "Urbanism as Way of Life," 2.
- 3 Jacobs, *The Death and Life*, 433; the use of the organic metaphor for the urban phenomenon, the notion that cities are organisms, is emphasized in Jacobs's work as well as in the work of numerous urban planners; see Sennett, *The Craftsman*; Fraser, *Henri Lefebvre and the Spanish Urban Experience* as well as "Ildefonso Cerdà's Scalpel."
- 4 Mumford, "What Is a City," 94; also *The City in History*, *The Culture of Cities*.

- 5 See Harvey, "Contested Cities: Social Process and Spatial Form"; also, *The Condition of Postmodernity, Justice, Nature and the Geography of Difference, Social Justice and the City, Spaces of Hope*, "Space as a Key Word," *Spaces of Capital, Paris: Capital of Modernity, The Urban Experience*, "Afterword," "City Future," "The New Urbanism," *A Brief History, Cosmopolitanism, A Companion, Rebel Cities*.
- 6 Zukin, *The Cultures of Cities*.
- 7 Sassen, "The Impact of the New Technologies and Globalization on Cities."
- 8 The epilogue of the book you are reading attempts a creative extension of Calvino's conceit.
- 9 Calvino, *Invisible Cities*, 34; translation by William Weaver.
- 10 This is Henri Lefebvre's clearly defined position appearing in *The Production of Space* and *The Right to the City*. This idea is explored more thoroughly in Fraser, "Urban Cultural Studies – A Manifesto (Part One)."
- 11 Here it is also interesting to note that geographers themselves have been increasingly looking to the arts, literature, painting, poetry, television, music and sound in their analyses (film is discussed in an endnote to Chapter 1). See, for example, Anderson, Morton and Revill, Cocola, Cosgrove, Dubow, Fortuna "Images," "Soundscapes," Gandy, Hones, Hudson, Lilley, Luria "Geotexts," "Thoreau," Mogel, Obert, Richardson, Rihacek, Susan Smith, "Performing," Wood, Duffy and Smith, and Yuan; as well as Fraser, "Re-scaling," "The Bergsonian," and Fraser and Fuoto.
- 12 Marxist notions of totality, explored in Chapter 2 of this book, and of the relationship of art to other seemingly relatively autonomous areas of life are implicit to the present approach, even if they are not made explicit throughout. On Marxism, see Anderson, Judt, Katznelson, Kelly, Kolakowski, Marx, *Grundrisse, Capital*, Poster. On Marxism and art, see Barbaro, Bukharin, Fraser, *Marxism and Urban*, Lang and Williams, Nedozechiw, Rose. The open Marxism of Henri Lefebvre, who figures in Chapter 2 and 3 of this book, is a crucial touchstone for readers: see Burkhard, Elden, "There Is a Politics," "Some Are Born," "Rhythmanalysis," *Understanding*, "Politics, Philosophy," Elden and Lebas, Goonewardena et al., Gottdener, Lefebvre, *Dialectical Materialism, State, Space, World, Everyday Life, Rhythmanalysis, La presencia, Critique of Everyday Life* (vols. I–III), *Urban Revolution, Henri Lefebvre: Key Writings, Right to the City, Introduction to Modernity, Production of Space*, "Toward a Leftist," *Sociology of Marx, Survival of Capitalism, Explosion, Marx, Le marxisme, Marx et la liberté, L'Existentialisme*, Léger, Lim, Mendieta, Merrifield, *Metromarxism, Henri Lefebvre*, Nadal-Melsió, Purcell, Schmid, Shields, *Spatial*, "Henri Lefebvre," *Lefebvre*, Simonsen, Stanek, and Watkins. Manuel Delgado Ruiz is interesting for readers from Hispanic Studies because of his own Lefebvrian legacy, see Delgado Ruiz "La ciudad,"

*Sociedades movedizas*, *La ciudad mentirosa*, and *El animal público*; as well as Degen, “Manuel Delgado,” Fraser, “Manuel Delgado’s Urban.”

13 On film and new media see Keane.

14 Debord, *The Society of the Spectacle*. See also Debord “Perspectives,” Kitchens, Knabb, Merrifield, *Guy Debord*. On Lefebvre and the Situationists, see Ross.


15 See *Henri Lefebvre and the Spanish Urban Experience* (Bucknell UP, 2011), *Toward an Urban Cultural Studies: Henri Lefebvre and the Humanities* (Palgrave, 2015) and articles published in the *Journal of Urban Cultural Studies* and *Environment and Planning D: Society and Space*.

16 On Hispanic literature and the urban/geography see also Fraser, “On Nocilla,” “Reconciling,” “A Snapshot,” “The Difference Space Makes,” “On Mental.” On film and its link to urban spaces, see Fraser “Madrid’s Retiro Park,” and “The Space in Film.”

17 With rhythm-analytical precision, Calvino recursively moves through a cycle of vignettes on “Cities & Memory,” “Cities and Desire,” “Cities and Signs,” “Thin Cities,” “Trading Cities,” “Cities & Eyes,” “Cities & Names,” “Cities & the Dead,” “Cities & the Sky,” “Continuous Cities,” and “Hidden Cities.”

# 1

## Layers of the Interdisciplinary City



**Abstract:** *Chapter 1: Layers of the Interdisciplinary City* works through historical attempts to provide a complex definition of the city itself – for example. Charles Baudelaire, Walter Benjamin, Louis Worth, Lewis Mumford, Jane Jacobs, David Harvey, Sharon Zukin and Saskia Sassen. This core set of ideas brings together a layered series of overlapping notions: the city as a set of physical structures, the city as a social institution, the city as a center of political and economic power, the city as a subjective experience, the city as an experienced subjectivity, the city as a temporal image, the city as a complex organism and the city as a work of art.

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## What is the city?

Looking backward on the long history of urban studies, one finds that attempts to provide definitions of the city are pervasive. These attempts also often prove frustrating to readers, in this sense: they are never concise, they are always nuanced and they are perennially subject to revision. One way to make sense of such constantly changing definitions of the city is to say that scholars have imagined the city from varying vantage points, from different perspectives shaped by the concerns of specific individuals, groups and disciplines. There is an undeniable truth to this first explanation; but there is simultaneously a second and complementary explanation that has to do with the nature of the city itself.

Part of the reason it is so difficult to define the city is that providing this definition is a complex matter. The city is a hybrid form: half thing and half idea. It is both a material and a social fact. We tend to see the city as a container for human activity, but it is also the result of human activity. It reflects and renders concrete those hierarchical and differential relationships that become ossified in human societies. But at the same time, the urban built environment impacts our behavior; the structure of the city encourages certain social relationships and discourages others. This is true whether we consider the largest scale or the smallest detail of urban space. On one hand, this can be acknowledged by careful study of such variables as the nature and accessibility of transportation networks, by the demographic arrangement of urban populations within the city and by the question of which neighborhoods might be chosen for urban renewal; on the other, even contemplation of the presence or absence of a mere sidewalk bench in a certain urban location can reveal more complicated struggles at work over the right that individual urbanites, groups or larger communities have to the urban space in which they live and work. One thing is certain: whether planned, neglected or contested, urban built environments and the structures of cities undoubtedly reflect the values of the society that has produced them. The city is at once a conditioning force and an expression of socio-political and economic power. What makes this an even more complicated matter is that not all in society have the power to shape the city equally.

It has been suggested by many that it is better to ask the right question than it is to find the answer to that question.<sup>1</sup> With this in mind, the question “What is the city?” is a good place to start, despite the fact that

it may at first seem too general, too philosophical, too abstract. In the process of thinking through this question one passes from a simple view to a complex view of the city. In truth, this is not a question but rather a problem or a puzzle, one that requires the input of the demographer, the geographer, the sociologist, the anthropologist, the economist, the poet, the philosopher and the scholar of literature, film and cultural studies. The intent here is not to answer the question of what the city is, but to open the question up, to appreciate its complexity. As such, it may aid us in this task to work through a core set of ideas on the city that are broadly reflective of approaches to thinking the urban. This core set of ideas brings together a layered series of overlapping notions: *the city as a set of physical structures, the city as a social institution, the city as a center of political and economic power, the city as a subjective experience, the city as an experienced subjectivity, the city as a temporal image, the city as a complex organism and the city as a work of art.*

It is necessary to recognize that the above notions are not mutually exclusive. In fact, we ought to think of these perspectives on the urban phenomenon as each constituting a level or a layer of thinking the city. Because none of these layers exists independently of the others, it is then pointless to talk about a possible hierarchy among them. Although this notion of city layers in truth maps directly to the discussions of interdisciplinary scholarship on the urban phenomenon carried out in Chapter 3 – just as to the layers of digital city projects theorized in Chapter 3 – here they are suggested as a definition of the city that is appropriately able to account for its complexity. One needs to understand that no “single description” will suffice,<sup>2</sup> “One cannot easily approach the city and the urban experience, therefore, in a one-dimensional way.”<sup>3</sup> Instead of being seen from one perspective or another, the city is, then, the sum total of the layers whose vignettes follow.

### [layer a: the city as a set of physical structures]

The birth of modern urban planning is frequently associated with Baron Georges-Eugène Haussmann’s renovation of Paris from the 1850s through the 1870s. Empowered by Emperor Napoleon III, in the process of renovating France’s capital Haussmann (1809–91) notoriously “bludgeoned the city into modernity”;<sup>4</sup> he gutted large central sections of Paris, tearing down existing buildings and pushing the urban poor to the outskirts of the city. A central motivation of Haussmann’s plan was to think the capital on a different scale – tripling the width of the roads, for



example – and he accomplished this using a geometrical logic to connect different points in the city to one another. This logic – which earned him the reputation as an “Attila of the straight line” – was replicated in countless other Western cities. Another such planned city was Barcelona, the capital of Catalunya on the Iberian Peninsula. Like Haussmann, planner Ildefons Cerdà (1815–76) saw the city in geometrical terms and expanded upon Barcelona’s medieval core with the Eixample – a neighborhood constructed on a grid system with a diagonal cut.<sup>5</sup> Where the older Barcelona had once been a compact city of tight, winding streets whose tall buildings in close proximity to one another sheltered pedestrians from the sun, its new carefully planned areas refashioned the city on a much grander scale. Cerdà’s novel use of the truncated corner or *xamfrà* – which allowed traffic to flow more easily through intersections – further testified to his geometrical vision for modern urban life.<sup>6</sup> Criticisms of the legacies of figures like Haussmann and Cerdà tend to point to the way in which their geometrical planning logic functioned to link monuments instead of people. The clear premise in each case – and despite Cerdà’s greater social ambitions it should be noted<sup>7</sup> – was that cities are in essence groups of buildings; the belief was that one changes social relations through the reconstruction of the urban fabric.<sup>8</sup> Considered as a set of physical structures, the city appears to be merely the sum total of buildings and districts, of streets, infrastructure and transportation networks. Yet, as the result of both material and immaterial practices,<sup>9</sup> the city is not merely a built environment but also a social institution.

### [layer b: the city as a social institution]

One of the greatest voices criticizing the legacy of a staid and geometrical take on the city as a set of static structures has been urban historian Lewis Mumford (1895–1990). Bemoaning that modern urban planning had consistently treated the city as a physical object, Mumford’s work asserted the social dimensions of the urban phenomenon.<sup>10</sup> He provided a “sociological answer” to the question “what is the city,” stating that it is a social and collective drama.<sup>11</sup> Mumford was one of many thinkers who sought to expand the horizons of urban planners, to ask them to think more broadly about what the city is and what it could be. His support for a renewed planning that would be less instrumentalist and more holistically human can be seen in many places;<sup>12</sup> thus, his statement that “current thinking about cities [had] proceeded without sufficient insight into their nature, their function, their purpose, their historic role, or

their potential future” can be read, in part, as a critique of the legacy of late nineteenth-century planners such as Haussmann and Cerdà.<sup>13</sup> From this perspective, their geometrical planning approach – which ended by equating the city with a set of static forms – expressed a mechanistic logic of industrialization. In particular, argued Mumford, the railroad was both a literal and figurative vehicle that extended this mechanistic approach to spatial production from the mines and industrial centers to urban areas, which it then instrumentalized.<sup>14</sup> Of course, the reality that the city is a social institution and not merely a set of static structures was acknowledged at some level even by those planners whose work was largely geometrical in nature. Note that it is often said that Haussmann’s widening of existing Parisian avenues facilitated the effective march of an urban police force and made the construction of barricades more difficult for citizen uprisings and civil protest.<sup>15</sup> For his part, Cerdà cared very much about the well-being of Barcelona’s urban poor, whose living conditions he had studied rigorously in a manuscript that dates from 1855.<sup>16</sup> But in each case – even if for different reasons – the social dimensions of cities were overshadowed by an approach that prioritized the urban built environment at the expense of its relationship with a wider web of social forces. Carried out through the twentieth century by a range of figures – including also the Chicago School of Urban Sociology that included Robert E. Park, Ernest Burgess and Louis Wirth – sociological approaches to the city brought a much-needed complexity to urban thinking that simultaneously took root in many social science disciplines.<sup>17</sup>

### **[layer c: the city as a center of political and economic power]**

The assertion by Mumford, and with him many others, regarding the important social dimensions of cities reflects a much more broad way of thinking the city than planners had historically recognized. In truth, this broad thinking led many scholars to emphasize the geographical, political and economic dimensions of the city. Louis Wirth (1897–1952) of the Chicago School famously wrote in 1938 that “The influences which cities exert upon the social life of man are greater than the ratio of the urban population would indicate, for the city is not only in ever larger degrees the dwelling-place and the workshop of modern man, but it is the initiating and controlling center of economic, political, and cultural life that has drawn the most remote parts of the world into its orbit and woven diverse areas, peoples, and activities into a cosmos.”<sup>18</sup> With this in

mind, it makes sense that we not contrast the city and the country but instead see both as partners in an uneven geographical development.<sup>19</sup> In the twenty-first century, now that we have passed the tipping point of urbanization,<sup>20</sup> it is clear that urban forms of life can be found even in the most “remote parts of the world.” It may seem obvious that cities are increasingly seen as privileged nodes in political systems that develop unevenly across the globe. As sites of social and economic power, there is no doubt that urban areas organize both agricultural and industrial forms of production; and there is also reason to prioritize the urban scale even in historical contemplation of national economies.<sup>21</sup> But there is still a disconnect between those theorists who see cities as incidental to economic production – a mere background or context – and those urban scholars for whom there is an intimate connection between the reproduction of cities and the forms taken by capital in the twenty-first century.<sup>22</sup> The arguments made by David Harvey (1935–) and Sharon Zukin (1943–) demonstrate that capital became increasingly urbanized throughout the twentieth century, and that the built environments and cultural aspects of city life are now driving capitalists’ investments and accumulation strategies.<sup>23</sup> In this way, one sees how scholarly meditations on the nature of the city have been scaled-up from a focus on physical infrastructure and built environment in the simple sense to include complex articulations with social, political, economic and cultural forces.

### [layer d: the city as a subjective experience]

At the same time that the question of “What is a city” was “scaled-up” in scholarship of the twentieth century to include distinct and yet overlapping academic discourses drawn from the social sciences, it was also “scaled-down” to focus on the subjective experience of the modern city. Many modern and contemporary theorists have shown that as the world became more urbanized, and as capital became more urbanized, consciousness became urbanized as well.<sup>24</sup> In simple terms what this means is that living in urban environments has had an effect on the way we think. In truth, this general idea can be traced back through a century and a half of scholarship on city life. To note one important landmark, in his canonical urban studies essay titled “The Metropolis and Mental Life” Georg Simmel (1858–1918) explored the way that the intense rhythms of life in urban areas pushed urbanites to adopt a particular frame of mind.<sup>25</sup> From this perspective, cities rendered obsolete the “deeply felt

and emotional relationships” of small-town life and encouraged a “blasé attitude” or a “state of indifference” that was now necessary in order to cope with the fast pace and sensory overstimulation that characterized urban life. “The psychological basis of the metropolitan type of individuality consists in the *intensification of nervous stimulation* which results from the swift and uninterrupted change of outer and inner stimuli,” Simmel famously wrote.<sup>26</sup> But of course, this emphasis on the individual’s perspective in understanding the sensory nature of urban environments had existed already in the nineteenth century. In his concise prose poems, French author Charles Baudelaire (1821–67) had captured the shifting and kaleidoscopic, sensory experience of urban life in his focus on the city-strolling figure of the *flâneur*. Later, the careful study of the Parisian arcades penned by Walter Benjamin (1892–1940) renewed interest in the key notes struck by Baudelaire’s poetic urban prose: “Benjamin also insists (as do some other Marxist writers, such as Henri Lefebvre) that we do not merely live in a material world but that our imaginations, our dreams, our conceptions, and our representations mediate that materiality in powerful ways; hence his fascination with spectacle, representations and phantasmagoria.”<sup>27</sup> Importantly, Benjamin’s work titled *The Arcades Project* not only captured the spectacle of the early twentieth-century city in its content, it also reproduced Baudelaire’s kaleidoscopic urban vision via its fragmentary presentation.<sup>28</sup> Twentieth-century scholarship notably expanded on this hallmark connection between mental life and the city by diversifying the range of subject positions from which the urban experience was approached.

### [layer e: the city as an experienced subjectivity]

The question of how the city is experienced cannot be meaningfully separated from the question of who it is that performs this act of experiencing. This is to admit that beneath the notion of the similarities that guide mental experience of the metropolis there is an incredible diversity. Scholarship on the global city has recognized that all urban areas tend to be constituted through both public and private forms of sociability. These forms unfold unevenly across urban landscapes and acquire their meaning – they are shaped and reshaped – according to a complex set of variables that is social, cultural and psychological, one that is both community-based and also dependent upon the actions of individual urban dwellers. At the most general level, scholars have tended to agree that the basis of urban life is always constituted through difference.<sup>29</sup> The

question we need to ask is how it is that difference – different people, different ideas, different ways of being – comes to be coded socially and at once politically in urban areas. On one hand, Enlightenment understandings of open spaces in the city as “spaces of appearance”<sup>30</sup> potentially allow for the expression of different ideas by different identities; on the other hand, interactional behavioral theorists show how normative behavior systematically stigmatizes the expression of certain identities and pushes them to the margins of urban life.<sup>31</sup> The question then arises of which groups enjoy what theorist Henri Lefebvre (1901–91) calls the “right to the city,” – under what conditions that right is enjoyed, and for what period of time? Variables such as class, gender identity, sexual orientation, race, ethnicity, nationality, linguistic or religious background, age and disability status and political viewpoint systematically impact access to and use of the urban environment.<sup>32</sup> Seeing the city in terms of its experienced subjectivities prioritizes the city more as a lived temporality than as a static space. It is thus important to recognize that the social dimensions of cities are not immutable but rather subjected to the actions of individuals, small groups and communities. Although a normative city may be contested or disrupted due to moments of spontaneous protest or, over time, through large-scale social change – this potential for shift does not abrogate the reality that there are those who enjoy greater power to reproduce the city in their own image. What is at stake, then, is seeing how a city’s image is subjected to change over time.

### [layer f: the city as a temporal image]

At the same time that the actions of individuals and communities contest and construct the city in their own fashion at their own particular scales, the city nevertheless appears to take on the status of a more-or-less coherent image. This image has to be seen – and it has been increasingly seen by architects and planners – as a temporal image. As Kevin Lynch (1918–89) wrote in *The Image of the City*: “Looking at cities can give a special pleasure, however commonplace the sight may be. Like a piece of architecture, the city is a construction in space, but one of a vast scale, a thing perceived only in the course of long spans of time. City design is therefore a temporal art, but it can rarely use the controlled and limited sequences of other temporal arts like music. On different occasions and for different people, the sequences are reversed, interrupted, abandoned, cut across. It is seen in all lights and all weathers.”<sup>33</sup> Understanding that the city is an image that exists only in time has the potential to lead to

an interactive or participatory model for urban planning. The legacy of Jane Jacobs (1916–2006) in fact suggests this very need for communities to be more involved in the planning of cities.<sup>34</sup> As Lynch himself notes the “mental image” of the city is neither coherent nor unified but instead the amalgamation of millions of people, who may not all enjoy the ability to change urban space.<sup>35</sup> “It is clear that the form of a city or of a metropolis will not exhibit some gigantic, stratified order. It will be a complicated pattern, continuous and whole, yet intricate and mobile,” he wrote.<sup>36</sup> Many scholars have allowed for the actions and movements of individuals and communities to impact the structure and experience of the city over the short and long terms: it is a legible image that can be “read,” and also an inscribed space that can be “written.”<sup>37</sup> To walk the city is, in many ways, to travel through time.<sup>38</sup> But if the city is an image, it is – as has also been noted – one tending toward spectacular forms that are perhaps easily harnessed by capitalist speculation.<sup>39</sup> In the end, the image of the city that is read and written on the ground by its inhabitants may be wholly different from the image of the city activated by planners, whose perspective has often been equated with a bird’s-eye view.<sup>40</sup> In both cases, however, the benefit of the term “image” is that it prompts consideration of the interconnection between the seemingly immaterial realm of mental activity and what appears as the material realm of the city’s physical presence. In truth the ways in which cities are planned, conceived, perceived and lived are all dependent on the nuances that are more often associated socially with the literary and artistic imagination.

### [layer g: the city as a complex organism]

One of the hallmark attributes of the literary and artistic imagination is metaphorical thinking. It is simultaneously crucial to understand that metaphor has also been a central component of modern urban thinking in a general sense. Specifically, the development of the metaphor of the city as a complex organism can be traced from seventeenth-century developments in medicine and physiology all the way to twenty-first-century discourse on the urban phenomenon. Urban thinker Richard Sennett (1943– ) explains in his book *The Craftsman* that “The scalpel had permitted anatomists to study the circulation of the blood: that knowledge, applied to the circulation of movement in streets, suggested that streets worked like arteries and veins.”<sup>41</sup> The metaphor of the city as a body was expressed in the discourse of circulation surrounding Haussmann’s Paris and also documented in Ildefons Cerdà’s theoretical

treatise on urbanization. Surgical language appears frequently in the preamble to the latter text where the planner refers to “the complex and heterogeneous nature of the organism of our cities” and pushes for “a true anatomical dissection” of urban areas.<sup>42</sup> In *The Modern City: Planning in the Nineteenth Century*, Françoise Choay underscores the fundamental role of biological metaphors in the birth of modern urban planning at a general level;<sup>43</sup> she notes, too, that Haussmann envisioned the wide avenues of Paris as arteries in a sort of urban circulatory system.<sup>44</sup> The organic metaphor for cities became embedded, too, in urban discourse throughout the twentieth century and remains a privileged part of twenty-first-century urban discourse. In the 1960s, Jane Jacobs insisted the city was “a complex organism akin to the life sciences” as a way of pointing to the methodological and instrumentalist flaw that plagued urban planning.<sup>45</sup> Seemingly unaware of the history of this planning metaphor, Charles Landry has written in *The Creative City: A Toolkit for Innovation* (2000) that “The primary metaphor that characterizes *the new thinking* is that of the city as a living organism.”<sup>46</sup> The fact that the organic metaphor for the city can be put to so many distinct uses – employed by even opposing ideological positions – may lead some to regard all metaphors with suspicion. To do so, however, would be a mistake. On the contrary, the opportunity is to recognize metaphor’s role as a key aspect of all human thinking and practices.<sup>47</sup> Going beyond mere metaphor, the truth is that the literary and artistic imagination understood broadly has long shaped the way we plan, conceive, perceive and even live the urban experience.

### [layer h: the city as a work of art]

As it was with the organic metaphor for the city, the understanding that the city is a work of art is a general premise that can be traced across all manner of scholarly understandings of the urban phenomenon. The city can be appreciated for its beauty; as Kevin Lynch noted, there is a simple pleasure that comes merely from looking at the city. But, it becomes necessary to recognize, throughout the twentieth century, the city as an object of contemplation became more and more tied up in the webs of urbanized capital that increasingly drive intercity competition, fueled by the rise of a postindustrial leisure- and service-oriented economy primarily in advanced capitalist nations. Donald Olsen’s aptly titled book – *The City as a Work of Art: London, Paris, Vienna* (1986) – blends nineteenth-century art history with urban studies, declaring that

“there exist connections between artistic styles and political forms, social institutions, economic practices, and ideological convictions.”<sup>48</sup> Thinkers such as Fredric Jameson have tied the twentieth-century development of postmodern aesthetics in urban areas to the “cultural logic of late capitalism.” Whereas on one hand Jane Jacobs used a fine arts metaphor to liken the movement of people through urban environments to a “sidewalk ballet,” on the other she maintained that “a city cannot be a work of art” in the simple sense.<sup>49</sup> Lewis Mumford saw the city as, in part, “an aesthetic symbol of collective unity” saying “The city fosters art and is art; the city creates the theater and is the theater.”<sup>50</sup> David Harvey contextualizes the urban evolution of Paris in terms of aesthetic shifts in the production of painting, poetry and novels.<sup>51</sup> Henri Lefebvre’s radical notion of the urban revolution points to the city as a work of art that will be realized once its use-value is reclaimed by its inhabitants:<sup>52</sup> “To put art at the service of the urban does not mean to prettify urban space with works of art. ... Leaving aside representation, ornamentation and decoration, art can become *praxis* and *poiesis* on a social scale: the art of living in the city as work of art. ... In other words, the future of art is not artistic, but urban, because the future of ‘man’ is not discovered in the cosmos, or in the people, or in production, but in urban society.”<sup>53</sup> It is undoubtedly true that art – understood in the widest possible sense – can aid us in answering the question that we have posed: “What is the city?” All art is, to one degree or another, social – and to the degree that artists of all genres have engaged with the urban phenomenon, they have both taken on a privileged role in discussions of what a city is, what it has been and what it may be.

## Art and the urban experience

Rather than insisting on the question “What is a city?” alone, as we have done earlier, it may be just as important to understand what it is not. As the above vignettes have made clear, the city is not a one-dimensional spatial object but rather a series of temporal layers. It is not static but shifting; it is not singular but multiple. The city is not a thing but a process; and as a process, the city is too complex to be claimed by any one scholarly discipline.

In order to comprehend the city’s multi-dimensionality, it is necessary to go beyond disciplinary specialization. It is necessary to use



disciplinarity as the organizational point for reintroducing the promise and potential of interdisciplinary perspectives. Of course, this movement from one discipline toward a much broader notion of the urban experience has been a staple of urban studies scholarship in general. On the whole – and particularly during the last three to four decades – historians, geographers, sociologists and anthropologists have ventured into artistic terrain in their explorations of the urban phenomenon. Recent books such as *The Spatial Humanities: GIS and the Future of Scholarship* (2010; edited by David J. Bodenhamer, John Corrigan and Trevor M. Harris), *Envisioning Landscapes, Making Worlds: Geography and the Humanities* (2011; Stephen Daniels, Dydia DeLyser, J. Nicholas Entrikin and Douglas Richardson, eds), and *GeoHumanities: Art, History, Text at the Edge of Place* (2011; Michael Dear, Jim Ketchum, Sarah Luria and Douglas Richardson, eds) have brought new recognition to the existing connections between the humanities and the humanities-related social sciences. But in these and many other new approaches synthesizing such disciplines, definition of the “humanities” privileges the discipline of History over work being done on the cultures of cities in the relative margins by scholars of literature and art, of film, music and textual culture writ large. Whereas Chapter 3 of this book will return to this issue, for now it suffices to say that it seems urban studies, as an interdisciplinary field, currently leans more toward the social sciences.<sup>54</sup> And strangely, as Chapter 2 will explore, digital humanities work tends to evacuate the social sciences from its interdisciplinary movements. In this context, the present book project should be seen as a move to close the gap between digital social science and humanities approaches to the urban phenomenon.

Rather than take the reader on a journey through the way in which humanities fields have for decades been in a state of becoming urban, *Digital Cities* takes as its starting point the vast tradition of art and humanities texts and art and humanities scholarship dealing with the urban phenomenon. There has been, of course, no shortage of either cultural products dealing with the urban or academic work on urban culture. The city has been the subject of painting for hundreds of years if not millennia: from the painting *The Sun Dog Painting* of Stockholm, Sweden (believed to have been painted in 1535) and the urban images by Michelangelo Marisi da Carvaggio to the more recent expansive cityscapes of Antonio López García in Madrid, Spain.<sup>55</sup> Paintings on cities allow us not merely to appreciate the city as an image or a spectacle but to toy with the notions of representation, creative ideation and the

dialectical relationship between production and reception of the built urban environment.<sup>56</sup> Likewise the cinema – as an extension of the visual representation of the city in paintings, but not to be limited by this historical relationship – combines with the literary arts of narrative, perspective and storytelling, even if there are nuanced distinctions to be made.<sup>57</sup> In the films of great directors – Jim Jarmusch, Yasujiro Ozu, Agnès Varda, Walter Ruttmann, Charlie Chaplin, Fritz Lang, Jean-Luc Godard; not to mention new generations of filmmakers coming of age in a more concertedly transnational era – the filmic city allows us to visualize the spatial form of existing and imagined cities. Graphic novels too hold a potential to be part of this interdisciplinary urban studies conversation.<sup>58</sup>

Poetry and prose have also dealt with the urban phenomenon. The city in poetry, for example, gives us access to the city as an idea, as an immaterial concept that nevertheless acquires material form. As expressed in the prose work of literary figures ranging from Baudelaire to James Joyce to Virginia Woolf to Franz Kafka, the city is not merely an objective place but a subjective experience.<sup>59</sup> In this sense, the notion of “the urban experience” better captures this dialectical relationship between urbanites and the built environment than might the simple term of “city.” Prose dealing with cities, for example, allows us to construct the city in our mind’s eye and teach us that cities are always imagined this way, that the image of a city is, through literary narrative, always constructed through and over time.<sup>60</sup> Through our coincidence with and divergence from a given narrative voice, we simulate and practice the art of seeing the city from one or more perspectives.

The city is not a thing but rather a force. Louis Wirth once wrote that the city draws “the most remote parts of the world into its orbit.” Seen in terms of this magnetic and celestial metaphor, it exercises a gravitational pull on people. Mass movements of urbanization and migration reinforce the prominence of cities as centers of social life. They are key nodes within complex political and economic systems that fuse the rural and the urban. Another crucial aspect of the city-as-force has to do with the hold it exercises on the imagination. Artistic products are, like the city itself, representations. They reflect both the ideas of individuals and the shared value attributed to them by collectivities. Artistic discourse is at once a specialized and non-specialized discourse that can form the basis of urban knowledge; it can bring all the social science disciplines under its structure and approach. In this sense, artistic discourse is a

particularly good basis for understanding cities as an interdisciplinary field, as will be explored in the next part of this book project. Ultimately, understanding representation is the key to understanding cities.

## Notes

- 1 Karl Marx: “Frequently the only possible answer is a critique of the question, and the only possible solution is to negate the question” (*Grundrisse* 127); Henri Bergson: “The truth is that in philosophy and even elsewhere it is a question of finding the problem and consequently of positing it, even more than of solving it” (*The Creative Mind* 51, original emphasis); Jane Jacobs: “Merely to think about cities and get somewhere, one of the main things to know is what kind of problem cities pose, for all problems cannot be thought about in the same way” (*The Death and Life*, 428, original emphasis). See also Fraser, “The Kind of Problem,” which focuses on urban pedagogy.
- 2 “What is the city? How did it come into existence? What processes does it further: what functions does it perform: what purposes does it fulfill? No single definition will apply to all its manifestations and no single description will cover all its transformations, from the embryonic social nucleus to the complex forms of its maturity and the corporeal disintegration of its old age” (Mumford, *The City in History*, 3).
- 3 “This difficulty is pervasive in urban studies and urban theory. We have abundant theories as to what happens *in* the city but a singular lack of theory *of* the city; and those theories of the city that we do have often appear to be so one-dimensional and so wooden as to eviscerate the richness and complexity of what the urban experience is about. One cannot easily approach the city and the urban experience, therefore, in a one-dimensional way” (Harvey, *Paris* 18).
- 4 *Ibid.*, 3.
- 5 In Cerdà’s plan, which made “little or no reference to the old city” (Rowe 11), “the streets were laid out with an overwhelmingly monotonous fidelity to plain geometry. They [were] all straight, perpendicular to each other and form[ed] exactly equidimensional residential blocks” (Goldston 78).
- 6 See Fraser “Ildefons,” *Henri Lefebvre*, and “A Beautiful City.” Joan Ramon Resina discusses the *xamfrà* and circulation in *Barcelona’s Vocation* 22 (see also Resina “From Rose”). Barcelona’s planning also figures in Choay, Corominas i Ayala, Degen, *Sensing Cities*, “Barcelona’s Games,” “Passejant,” Hall. For a range of interdisciplinary scholarship on the urban culture of Barcelona, see also Loxham, and McNeill, “Barcelona,” *Urban Change*.

- 7 See Miles and Miles, *Consuming Cities* 79; Marshall 7; Resina, *Barcelona's Vocation* 21. Cerdà himself criticized the Paris urban reforms (see Fraser "Ildefons"). On Barcelona's urban evolution, see also Delgado Ruiz 2007b.
- 8 Centuries later, across the Atlantic in New York City, one can see the resonance of aspects of Haussmann and Cerdà's planning in the brute destruction carried out by the polarizing figure of Robert Moses, whose plans for NYC were contested by Jane Jacobs and others.
- 9 See Latham and McCormack.
- 10 "The city as a purely physical fact has been subject to numerous investigations. But what is the city as a social institution?" (Mumford, "What Is a City" 93; also 93–94). Elsewhere he refers to the city as "an integrated social relationship" (Mumford *The Culture of Cities*, 3; also 480).
- 11 "The physical organization of the city may deflate this drama or make it frustrate; or it may, through the deliberate efforts of art, politics and education, make this drama more significant, as a stage-set, well-designed, intensifies and underlines the gestures of the actors and the action of the play" (Mumford, "What Is a City" 94).
- 12 See *The Culture of Cities* where he writes that "genuine planning is an attempt, not arbitrarily to displace reality, but to clarify it and to grasp firmly all the elements necessary to bring the geographic and economic facts in harmony with human purposes" (Mumford, *The Culture of Cities*, 376).
- 13 Mumford, *The Culture of Cities*, ix.
- 14 *Ibid.*, 149–50, 159.
- 15 See Miles and Miles, *Consuming Cities*.
- 16 See Fraser "Ildefons Cerdà's."
- 17 See also Park (*On Social*, "The City"), whose now classic work has influenced generations of subsequent urban theorists, including even David Harvey.
- 18 Wirth "Urbanism," 2. This quotation begins with the line: "The degree to which the contemporary world may be said to be 'urban' is not fully or accurately measured by the proportion of the total population living in cities."
- 19 The work of Raymond Williams, particularly *The Country and the City* is an important point of reference here. See also Williams, *Marxism and Literature*, "The Uses," and "The Future"; Gorak, Grossberg.
- 20 That is, over 50% of the globe's population now lives in cities. In *Rebel Cities*, David Harvey notes a downward trend in China's rural population, which – from 1990 to 2010 – has dropped from 74% to 50%. He also writes "Though there are plenty of residual spaces in the global economy where the process is far from complete, the mass of humanity is thus increasingly being absorbed within the ferments and cross-currents of urbanized life" (*Rebel Cities*, xv).
- 21 On Jane Jacobs' perspective here, see Fraser, "The Kind of Problem," 267: "In *The Economy of Cities* (1969), for example, she argues against the commonly

- held belief that it is the development of agriculture that made cities possible and suggests that the agglomeration characteristic of cities in fact made the development of agriculture possible. In *Cities and the Wealth of Nations* (1984) she admonishes the conflation of city and national economies, underscores the dependence of the latter upon the former, and proposes that cities in fact depend on other cities in order to arise and flourish (140).” See also Fraser, “The ‘Sidewalk Ballet.’”
- 22 Marxist urban geographer David Harvey notes that both Marxist and non-Marxist scholars of economics are likely to ignore the increasing and crucial importance of cities to capitalist production. “But in fact the structure of thinking within Marxism generally is distressingly similar to that within bourgeois economics. The urbanists are viewed as specialists, while the truly significant core of macroeconomic Marxist theorizing lies elsewhere” (Harvey, *Rebel Cities*, 35).
- 23 See Harvey, *Rebel Cities, Spaces of Capital*, and Fraser, *Marxism and Urban Culture*.
- 24 David Harvey explores the urbanization of capital and the urbanization of consciousness as parallel processes in *The Urban Experience*.
- 25 Simmel’s work was like that of David Harvey and Henri Lefebvre, also influenced by Karl Marx.
- 26 Simmel 150.
- 27 Harvey, *Paris*, 18.
- 28 “The problem for the reader of Benjamin is how to understand the fragments in relation to the totality of Paris” (Harvey, *Paris* 18).
- 29 Harvey notes that community is a “highly ambiguous notion that nevertheless plays a fundamental role in terms of the reproduction of labor power” (*The Urban Experience*, 231; see also Harvey, *Cosmopolitanism*, “The New Urbanism”; Esposito; Young).
- 30 The work of Hannah Arendt is a touchstone in this regard.
- 31 The work of psychological sociologist Erving Goffman (1922–82) sought to account for behavioral or interactional norms. Ali Madanipour’s work on social exclusion and space is also relevant here.
- 32 This is a major theme of Manuel Delgado Ruiz’s work, see in particular *Sociedades movedizas*.
- 33 Lynch, *The Image of the City* 1.
- 34 Jacobs famously described her book *The Death and Life of Great American Cities* as an “attack” on urban planning (3). See also Hirt and Zahm, Fraser “The Sidewalk,” “The Kind of Problem,” Jacobs, *The Death and Life, Cities and the Wealth, The Economy*.
- 35 “Not only is the city an object which is perceived (and perhaps enjoyed) by millions of people of widely diverse class and character, but it is the product of many builders who are constantly modifying the structure for reasons of

- their own. While it may be stable in general outlines for some time, it is ever changing in detail. Only partial control can be exercised over its growth and form. There is no final result, only a continuous succession of phases. No wonder, then, that the art of shaping cities for sensuous enjoyment is an art quite separate from architecture or music or literature. It may learn a great deal from these other arts, but it cannot imitate them" (Lynch 2).
- 36 Lynch 119.
- 37 "A city is a multi-purpose, shifting organization, a tent for many functions, raised by many hands and with relative speed. Complete specialization, final meshing, is improbable and undesirable" (Lynch 91). See also Lefebvre's many works, and de Certeau, on this point.
- 38 Consider these two quotations: "The street conducts the flâneur into a vanished time. For him, every street is precipitous. It leads downward – if not to the mythical Mothers, then into a past that can be all the more spellbinding because it is not his own, not private" (Benjamin 416); "But for Walter Benjamin [...] the flâneur was not simply someone who walked the streets of the modern metropolis and disappeared into the swarm of crowds; rather, it was someone who was a time-traveler. As the flâneur walked along the streets, he was conducted downward in time. What a striking idea: that the physical topography of the street could lead you back to a time that had vanished, to a time that was not even your own. How could this be? Is it really the street, or might it be a kind of sensibility or openness to apprehending, listening to, and, ultimately, caring about and caring for the past? In other words, maybe the past is always there – quiet, muted, faded, hidden – and it is the task of the flâneur to enable it to speak, to make it come alive and come to light, and, thereby, resonate with the present. In this sense, the past must be conjured, awakened, and cared for." (Presner et al., *Hypercities*, 23).
- 39 See Debord; Knabb; Merrifield, *Guy Debord*.
- 40 Harvey (*The Urban Experience*), de Certeau and Barthes have all written on this "bird's-eye view" of the city and the powers often attributed to it.
- 41 Sennett, *The Craftsman*, 204; see also Sennett, *Flesh and Stone, The Conscience*. The organic metaphor resonates implicitly even in perspectives that equate the urban phenomenon with movement in general terms. Consider Kevin Lynch's comment that "Moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts" (Lynch 2).
- 42 See Fraser, *Henri Lefebvre*, "Ildefons Cerdà's." In his original 1867 treatise Cerdà himself writes: "Introduciendo el escarpelo hasta lo más íntimo y recóndito del organismo urbano y social, se consigue sorprender viva y en acción la causa originaria, el germen fecundo de la grave enfermedad que corroe las entrañas de la humanidad" (vol. 1, 1:16–17; also 12–13) [Introducing

the scalpel into the most intimate and recondite area of the social and urban organism, one comes upon the original cause, alive and in the moment of acting, the fecund seed of the serious illness that corrodes the innards of humanity].

43 See Choay, 27.

44 Ibid. 18.

45 Jacobs, *The Death*, 433.

46 Landry, 57, emphasis added.

47 The most basic formulation of this premise is observed in Lakoff and Johnson's now classic book, *Metaphors We Live By*.

48 Olsen, ix.

49 Jacobs, *The Death*, 372–73.

50 “The city in its complete sense, then, is a geographic plexus, an economic organization, an institutional process, a theater of social action, and an aesthetic symbol of collective unity. The city fosters art and is art; the city creates the theater and is the theater. It is in the city, the city as theater, that man's more purposive activities are focused, and work out, through conflicting and cooperating personalities, events, groups, into more significant culminations” (Mumford, “What Is a City” 94).

51 “Before, [1848] there was an urban vision that at best could only tinker with the problems of a medieval urban infrastructure; then came Haussmann, who bludgeoned the city into modernity. Before, there were the classicists, like Ingres and David, and the colorists, like Delacroix; and after, there were Courbert's realism and Manet's impressionism. Before, there were the Romantic poets and novelists (Lamartine, Hugo, Musset, and George Sand); and after came the taut, sparse, and fine-honed prose and poetry of Flaubert and Baudelaire. Before, there were dispersed manufacturing industries organized along artisanal lines; much of that then gave way to machinery and modern industry. Before, there were small stores along narrow, winding streets or in the arcades; and after came the vast sprawling department stores that spilled out onto the boulevards. Before, there was utopianism and romanticism; and after there was hard-headed managerialism and scientific socialism” (Harvey, *Paris*, 3).

52 He uses the notion of the “work of art” broadly enough so as to include both the city itself as a work and also cultural products such as “poetry, music, theater, the novel, etc.” Lefebvre *La presencia*, 237.

53 Lefebvre, *The Right*, 173.

54 I have worked to correct this bias both in my foundation of the *Journal of Urban Cultural Studies* first volume published in 2014) and my 2015 book *Henri Lefebvre and the Humanities: Toward an Urban Cultural Studies*.

55 On the latter see my recent *Antonio López García's Everyday Urban Worlds: A Philosophy of Painting*, which looks in depth at three specific and well-known

- images by the artist in their wider urban context: *Gran Vía, Madrid desde Torres Blancas* and *Madrid desde la Torre de Bomberos de Vallecas*.
- 56 See books by Seidler Ramirez and Cooper.
- 57 For work that blends film studies, geography, cities and representation see Aitken and Zonn, Aitken and Dixon, Clarke, Cresswell and Dixon, Ford, Hopkins, Lotman, Loxham, Mennel, Shiel and Fitzmaurice, Webber and Wilson, and of course relevant film theory from Kracauer, Prince, and Wollen.
- 58 See, for example, the studies of Feldman, Fraser and Méndez and an article by Martin Lund forthcoming in double issue 2.1–2 of the *Journal of Urban Cultural Studies*.
- 59 Robert Alter's *Imagined Cities: Urban Experience and the Language of the Novel* looks at Flaubert, Dickens, Bely, Woolf, Joyce, Kafka (cf. Harvey).
- 60 See also classic work on the city in literature by Galfant and Pike as well as the more recent interdisciplinary resurgence of such studies by Holmes, Moretti, "Homo Palpitans," Prakash, Young and Holmes.



# 2

## Disciplinary/Digital Debates and the Urban Phenomenon

*Abstract: Chapter 2: Disciplinary/Digital Debates and the Urban Phenomenon shifts from a focus on defining of the city toward seeing how intellectual knowledge has become fragmented across particular disciplinary frameworks. Attention is given to the increasing interdisciplinarity of humanities and social science research in general, before addressing the interdisciplinary challenges facing digital work throughout the second half of the twentieth century and into the twenty-first. The challenges of integrating disciplines can be understood by looking at two particular moments: first, the Snow-Leavis controversy of the early 1960s and, second, the origins of the digital humanities and their contemporary evolution. The final section of this chapter returns to the work of Henri Lefebvre as a way of bringing humanities, social sciences and digital sciences together.*

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## The humanities, the social sciences and the digital sciences

Because it is an inherently interdisciplinary object of inquiry, our need to digitally represent the urban phenomenon pushes us to rehearse the history of disciplinary friction between the social sciences and the humanities. We must admit from the outset that disciplines have never been bounded, internally homogeneous or continuous through time; instead, their boundaries are porous, their concerns are heterogeneous, their trajectories ever-shifting. Nevertheless, talk about disciplines as a whole is warranted because they are routinely seen that way – and, this, by both insiders and outsiders. Although the schisms internal to disciplines are many and worthy of consideration in their own right,<sup>1</sup> what is of concern here is the way in which commitments to and perceptions of disciplinary work both interact across disciplinary boundaries. Before moving on to consider disciplinarity in the context of digital work, specifically, it will help to return to an enduring argument surrounding the sciences and humanities in general.

A crucial and representative moment in scholarly conflicts raised by interdisciplinary thinking occurred at the beginning of the 1960s. Known informally as the Snow–Leavis controversy, the moment in question involves a public feud between two public intellectuals carried out over a number of years. At its core, this is a conflict about the relative value of arts and sciences, one whose resurgence in the context of rising interest in the digital humanities warrants our extended consideration. As this conflict is meant to illustrate the nuances of interdisciplinary connection, here I will attempt to provide only the most basic of details surrounding the controversy.<sup>2</sup>

Charles Percy Snow (1905–80) was a scientist by training who delivered the prestigious Rede Lecture at the Senate House in Cambridge in 1959. The title of his talk that year was “The Two Cultures,” by which he meant to contrast the cultures of “literary intellectuals” and “natural scientists.” Snow considered these to be “two polar groups” existing in “mutual incomprehension” from each other.<sup>3</sup> Though he explicitly sought to reconcile these two cultures in his lecture, his preference for scientific culture over literary culture was evident in the arguments forming the basis of his talk.<sup>4</sup> In the end, Snow drew criticism not merely for his background as a scientist but also for his somewhat substantial

incursions into fiction writing, popular successes that were ultimately not well received by critics.<sup>5</sup>

His antagonist was F. R. Leavis (1895–1978), professor of English at Downing College, Cambridge. Leavis responded to Snow directly in his Richmond Lecture of 1962, which he provocatively titled “Two Cultures? The Significance of C. P. Snow.”<sup>6</sup> While questioning Snow’s authority, Leavis simultaneously questioned his position, stating “there is only *one* culture; to talk of *two* in your way is to use an essential term with obviously disqualifying irresponsibility [ ... ] It is obviously absurd to posit a ‘culture’ that the scientist has *qua* scientist.”<sup>7</sup> Though Leavis was in truth an innovator in his own field, he was seen by many as a voice supporting the connections between traditional literary values and a broader humanist commitment. Although it was misunderstood and misrepresented, the point he made was not that literary culture was more important than scientific culture, but rather that what was needed was an understanding of the human world that went beyond disciplinary specialization.<sup>8</sup>

Since the 1960s, the Snow–Leavis controversy has long been a staple of conversations about scholarly interdisciplinarity. That it has reappeared in discussions of the digital humanities should not come as a surprise: at its core, the “mutual incomprehension” of the two cultures identified in Snow’s lecture and complicated by Leavis’s subsequent response concerns our social and academic attitudes toward technology. A fine example is given some 50 years later, in the introduction to the 2011 volume *Switching Codes: Thinking Through Digital Technology in the Humanities and the Arts*, where matters of interdisciplinarity are reductively framed as matters of technology alone. Roderick Coover, the author of the Introduction to that edited book writes:

With the spectacular expansion of information technology (IT) in the past four decades, the “two cultures” problem has become considerably more complicated. In ways that Snow could hardly have anticipated, the culture of arts and letters is now permeated by science in the form of information technology, from word processing and semantically structured research networks to computer-generated imagery, interactive cinema and creative machines. The very idea of “information science” indicates how “deeply intermingled” the two cultures have become [ ... ] Yet mutual incomprehension persists. Generally speaking, scholars and artists understand little about the technologies that are so radically transforming their fields, while IT specialists often have scant or no training in the humanities or traditional arts.<sup>9</sup>

It must be noted that academic projects, courses and plans of study integrating digital tools and the arts and letters have been growing throughout the beginning of the twenty-first century and also since 2011. In particular, titles in the metaLABprojects series – these include *HyperCities* (Presner et al., 2014), *Graphesis* (Drucker, 2014), and *The Library Beyond the Book* (Schnapp and Battles, 2014) – are indications of how far the field has come (not to mention a number of other book-length texts).<sup>10</sup> In addition, however, rather than portray technology as a value-neutral enterprise, it should be made clear that there is a political and/or ideological aspect of the move toward digital projects that is less frequently discussed by its proponents.<sup>11</sup> By this, I merely mean to point to a criticism already present in the comments made by Leavis so many decades ago. This criticism involves the role of technology in interdisciplinary debates.

Among the charges leveled by Snow on the group of literary intellectuals he feigned to form part of and transcend through his purported interdisciplinarity was that of being “natural Luddites.”<sup>12</sup> In Snow’s time – just as more recently in *Switching Codes* – the charge of fearing technology thus functions to obscure more complex interactions across disciplinary borders. It makes no difference if this charge is attributed directly (in 1959, fear of technology) or indirectly (in 2011, historical lack of disciplinary willingness to engage with technology). In either case, significant differences of object and method are elided and instrumentalized through mention of technology, which is taken in the simplest sense possible and seemingly divorced from social contexts. This is, in part, what digital humanists now attempt to combat when they point to the growing understanding that “DH [Digital Humanities] is most powerful as a disruptive political force that has the potential to reshape fundamental aspects of academic practice.”<sup>13</sup>

For his part – and although he questioned the reduction of literature, through computerized instruction, to what he called “structured tasks”<sup>14</sup> – Leavis sought to shift debate back from such instrumentalization toward discussion of broader social issues: “I am not suggesting that we ought to halt the progress of science and technology, I am insisting that the more potently they accelerate their advance the more urgent does it become to inaugurate another, a different, sustained effort of collaborative human creativity which is concerned with perpetuating, strengthening and asserting, in response to change, a full human creativity.”<sup>15</sup> His assertion that “there is only one culture” was thus not a call to

invest in the arts and letters at the expense of the sciences, even if it was misunderstood as such at the time (and since).<sup>16</sup> Instead, his was a call to reignite humanistic inquiry at a grand scale where the arts and the sciences each had a role to play in understanding a common if nuanced global culture fashioned by humankind.<sup>17</sup>

We can learn much from the Snow–Leavis controversy. The most important lesson offered by its recent reappearance is that a focus on technology should not substitute for a more thorough consideration of disciplinary issues. In seeking to bridge two distinct cultures, Snow imbued each with an ontological primacy they do not in truth possess. On the other hand, Leavis wished to return discussion to that single culture Snow’s perspective had divided up into different fragmented disciplines. Snow takes disciplinary specialization for granted; in fact he would have it naturalized, whereas the distinguishing feature of Leavis’s argument is that it goes beyond specialization to consider the whole. It is revealing in this regard that Jerome Kagan’s similarly recent book titled *The Three Cultures: Natural Sciences, Social Sciences and the Humanities in the twenty-first Century* (2009) – whose title clearly indicates it has been inspired by the Snow–Leavis controversy – constitutes a further attempt to move toward a more inclusive and inherently interdisciplinary academic culture. To the degree that they, too, have centered on technology at the expense of totality, debates surrounding the Digital Humanities have replicated the schism between Snow and Leavis.

The beginnings of the Digital Humanities, which are perhaps easily overlooked by newcomers,<sup>18</sup> are to be found in what was known as humanities computing. An Italian Jesuit Priest named Roberto A. Busa is frequently credited as an originator; his collaborative project with IBM, which began in 1949, sought to “create a concordance of all words ever published by Thomas Aquinas” and earned him a reputation as “the pioneer of computational linguistics.”<sup>19</sup> The subsequent development of the field replicated the distinction between science and arts internally, as machines were seen by many as servants or a “technical support to the work of the ‘real’ humanities scholars, who would drive the projects.”<sup>20</sup> Some maintain that this paradigm has shifted over time, with a first wave or “quantitative phase” having led into a second wave or “qualitative phase” of digital humanities work where “researchers increasingly saw the computational as part and parcel of what it meant to do research in the humanities itself.”<sup>21</sup>

Of course, there is reason both to accept and to question such a perspective. As Matthew K. Gold suggests in the introduction to *Debates in the Digital Humanities* (2012), the evolution of the field has come with a number of growing pains.<sup>22</sup> On one hand, the formation of nationally recognized centers for digital work at prestigious universities has certainly allowed teams of researchers to integrate what was formerly called “computing” with “the humanities” at levels that are theoretical, methodological and project-specific.<sup>23</sup> On the other hand, pressing questions still remain about the uneven geographical development of the digital humanities; that is, as Gold quite rightly asks, “Is it accessible to all members of the profession, or do steep infrastructural requirements render entry prohibitive for practitioners working at small colleges or cash-strapped public universities?”<sup>24</sup>

These issues should never be fully pushed to the side, and moreover, they do indeed warrant more direct and sustained consideration than can be entertained here. In brief, it should be acknowledged that the university is a much different institution in the twenty-first century than it was in the origins of humanities computing noted earlier.<sup>25</sup> There are clearly certain similarities that exist between the contemporary context and that of the late-1960s university in terms of how knowledge is routinely instrumentalized and packaged for easy consumption by students who are viewed as receptacles.<sup>26</sup> Nevertheless, the increasing corporatization of higher education over the last four decades – combined with the gradual and systematic erosion of shared governance in university contexts – cannot but impact how we see the digital humanities today.<sup>27</sup> Thus, there is a double-edged character to the present-day institutionalization of the digital humanities.<sup>28</sup> Although there is an emancipatory potential to the digital in general, and to the construction of large-scale digital humanities projects in particular, there is also a risk of complicity. Such projects may indeed provide ways of connecting universities with extramural communities who would welcome the knowledge, access to information, the wider social cohesion and potentially the ease of political organization and strength of public dialogue they may already be struggling to acquire. On the other hand, the scale of these projects may encourage partnerships with funding agencies who may now be in a position to determine content and message; their reliance on digital spectacle may allow them to be more easily de-politicized; and their prohibitive cost may reinforce the uneven geographic inequalities that exist beyond the university walls. Moving forward, however, I would like to focus specifically on the consequences

of the way in which interdisciplinarity has been narrowly defined in the current discourse on digital humanities. In truth, this narrow definition of interdisciplinarity stems from the origins and development of a field that was once known as “humanities computing.”

As part of the growing pains that have been intrinsic to the development of digital work, significant questions have long been raised about the continuing value of hallmark traits of what have been called the “traditional” humanities. A key question remains that posited by the title of the final essay in the volume edited by Gold, which is written by scholar Alan Liu: “Where Is Cultural Criticism in the Digital Humanities?” There has been a tension dating from the expansion of digital humanities work during the 1990s that in practice pits traditional textual analysis and its links with cultural criticism against novel forms of machine analysis and visualization. Given the development of DH works during the 2000s – and although this characterization is a simplification of sorts – one might sum this tension up by contrasting “close reading” to what digital humanist Franco Moretti has famously called “distant reading.” Seemingly describing the scholarly anxiety brought about by the changes to the expanding notion of literary canon, Moretti writes:

Knowing two hundred novels is already difficult. *Twenty thousand?* How can we do it, what does “knowledge” mean, in this new scenario? One thing for sure: it cannot mean the very close reading of very few texts – secularized theology, really (“canon”!) – that has radiated from the cheerful town of New Haven over the whole field of literary studies. A larger literary history requires other skills: sampling; statistics; work with series, titles, concordances, incipits – and perhaps also the “trees” that I discuss in this essay.<sup>29</sup>

Today’s scholars now have increasing access to a growing number of texts that were, for one reason or another, unavailable to previous generations: they had not been written yet; they had been written, but lay undiscovered; they had been discovered, but only by a select few; they had been discovered and subsequently dismissed by the literary establishment...and so on.<sup>30</sup> In one sense, the shift necessitated by a changing understanding of canon is no different from other forms of disciplinary shift that the humanities have assimilated over time.

On the other hand, however – as Alan Liu’s chapter title suggests – the new risk is that digital projects tend to replace cultural critique with mere cultural description. A supportive view of digital work frames it an active process, students and researchers are actively engaged in knowledge production, committed to a culture of making that offers a valuable

alternative to the more passive reception of traditional knowledge.<sup>31</sup> A skeptical view of digital work alleges that it risks abandoning the hallmark intellectual values of critical thinking in its drive to build. An even more skeptical view acknowledges that digital work turns education and research into mere spectacle. The question to ask regards what is possibly lost in this disciplinary shift. Is it true – as some vocal proponents believe and as some “traditionalists” would likely agree, each from their own perspective, of course – that DH entails moving from “reading and critiquing to building and making?”<sup>32</sup> Must it mean abandoning cultural criticism and its ties with close reading in favor of sampling, statistics and concordances? This is a question that has been implicit since the time of Father Busa’s initial foray into humanities computing. Under current circumstances, the question voiced by Alan Liu, already quoted earlier and evident in the title of his 2012 essay, is a quite valid one: Do reading and critiquing still have a role to play in twenty-first-century education?<sup>33</sup> Or is the point of digital work to fashion knowledge into a convenient spectacle that is easily digested?<sup>34</sup>

Faced with this tension resulting from the perceived ideological and political vacuum of some digital work and perhaps its as-of-yet unrealized potential as a critical and even political force, it is easy to understand why many humanists seek to retrench in their roles as defenders of the “traditional humanities.” Instead of making the valuable argument, as others have, for the continued importance of the traditional humanities alone, I want to inhabit a middle ground. Moretti’s sampling and statistics, Busa’s concordances – the past legacy of humanities computing and the future potential of digital humanities – these are not opposed to but rather complementary to the traditional humanities. My own view is that distant reading does not render close reading obsolete. Simultaneously, I also want to follow Liu’s question to its logical and interdisciplinary conclusion. Instead of returning to a reductively disciplinary definition of the humanities, we might instead acknowledge reading and critiquing as an interdisciplinary enterprise. As Liu himself points out, calling for humanities scholars to engage the social sciences: “While digital humanists develop tools, data and metadata critically [...] rarely do they extend their critique to the full register of society, economics, politics, or culture.”<sup>35</sup> It is more than interesting that social sciences have been rendered invisible both in discussions of the Snow–Leavis controversy and within work focusing on the transition between humanities computing and the digital humanities. Jerome Kagan’s book, mentioned earlier,



has brought the social sciences into the discussion of interdisciplinarity in general, and it is also necessary to widen the understanding of disciplinarity as it commonly relates to digital work so as to include the social sciences, specifically.<sup>36</sup> In the creation of digital projects, we need not merely provide space for stories and narratives in the representation of geographic contexts,<sup>37</sup> we simultaneously need to provide a mechanism by which interdisciplinary work on the urban phenomenon can flourish.

Discussions about the present and future of digital work should not be merely about the connection between computing and the humanities, but instead about the relationship of the social sciences to the humanities. It is a commonplace that DH is an interdisciplinary field,<sup>38</sup> but there is little-to-no overt recognition that it tends to be a very specific kind of interdisciplinary field. That is, although it involves the humanities and digital methods drawn from communication and media studies, computer science, information science and library science, there is very little recognition that the social sciences relate to existing and future DH work. Not surprisingly, in the brief history of digital humanities and humanities computing authored by Susan Schreibman, Ray Siemens and John Unsworth as the introduction to *A Companion to Digital Humanities*, the mention of “(GIS)-derived data” is linked only to archaeology, completely side-stepping the issue of how Geographic Information Science makes certain kinds of interdisciplinary (social science-humanities) projects possible.<sup>39</sup> It is also necessary to point out that, of course, a portion of successful digital humanities grant applications and projects already significantly engage the social sciences. What is interesting is this: as “computing” and “the humanities” have grown to arguably be equal partners in a new interdisciplinary field, they have both now defined themselves in a way that pushes social science research to the margins. The risk is that scholars in geography – whether via the use of GIS data or not – are expected to assume the role of servant to the “real” humanities scholars, who would drive the projects,” in a strange reversion.

The term chosen for this book and used in its third part, *Digital Cities*, is thus of great value as it allows us to mark a divergence from discussion of the digital humanities alone. The term “digital cities” can function as an explicit reference to an interdisciplinary field that draws from humanities and social science disciplines as well as digital methods without being limited by previous discussion into the disciplinary limits

and problems of digital work as a whole. It is meant as a specific area of scholarly interest, one that necessarily connects with discussions of interdisciplinary and digital scholarship on the whole, but that need not rehash those discussions in their entirety. Fusing urban studies with digital work thus potentially involves a dual and simultaneous return from disciplinary specialization toward the whole of social life. In this new paradigm of the digital urban geo-humanities, the humanities, the social sciences and the digital sciences can collaborate as equal partners in pursuit of a common goal. That goal is to understand the urban phenomenon as a totality.

## **What is urban totality?**

As an object of inquiry subjected to scrutiny by modern thinkers from various disciplinary perspectives from the nineteenth-century to the twenty-first, it is clear that the hallmark characteristic of the urban phenomenon is its interdisciplinarity. It is one thing to accept that this is true, and quite another to think more concertedly about what this means for current and future scholarship. That is, there are a number of scholars who have recognized the interdisciplinarity of the urban phenomenon, and who have made attempts to return their own disciplinary concerns to this notion of urban totality. Chief among them, however, is Henri Lefebvre (1901–91). If we are to move into a new phase of thinking the city from an interdisciplinary perspective in digital contexts, a good place to start is Lefebvre’s Marxian notion of totality. The notion of totality must be understood from two interrelated perspectives simultaneously. The first looks to the city, specifically, as the object of scholarly study through an interdisciplinary method; the second acknowledges a theoretical premise whereby knowledge itself has been subjected to the same fragmenting, compartmentalizing and alienating tendencies of contemporary capitalism that are seen in the social division of labor and the class structure of global society.<sup>40</sup> The benefit of using Lefebvre’s work for these purposes is that both of these perspectives are unified in his extensive urban writings.

First, the city requires an interdisciplinary method because the city is not a simple object. The urban phenomenon, Lefebvre insists, “cannot be grasped by any specialized science,” a fact that “makes interdisciplinary cooperation essential.”<sup>41</sup>

Every specialized science cuts from the global phenomenon a “field,” or “domain,” which it illuminates in its own way. There is no point in choosing between segmentation and illumination. Moreover, each individual science is further fragmented into specialized subdisciplines. Sociology is divided up into political sociology, economic sociology, rural and urban sociology, and so forth. The fragmented and specialized sciences operate analytically: they are the result of an analysis and perform analyses of their own. In terms of the urban phenomenon considered as a whole, geography, demography, history, psychology, and sociology supply the results of an analytical procedure. Nor should we overlook the contributions of the biologist, doctor or psychiatrist, or those of the novelist or poet [...] Without the progressive and regressive movements (in time and space) of analysis, without the multiple divisions and fragmentations, it would be impossible to conceive of a science of the urban phenomenon. But such fragments do not constitute knowledge.<sup>42</sup>

Put another way, no “collection of objects – economy, sociology, history, demography, psychology, or earth sciences, such as geology” can reconstitute the complexity of the urban phenomenon. “The concept of the city no longer corresponds to a social object,”<sup>43</sup> instead it is a process.

As we saw in Chapter 1 of this book, many have recognized that the city is not a thing or a simple object, and in this sense Lefebvre is not unique. He is merely one of many who, throughout the last 150 years, have argued for the complexity of the urban.<sup>44</sup> In another sense, however – understood at the scale that is proper to its reproduction – the urban phenomenon illustrates a dynamic that is closely related to if not indicative of the general functioning of capitalist societies. What this means is that underneath these seeming matters of mere disciplinary perspective there are matters of knowledge, alienation and labor – work in both the material and intellectual senses. Like the interlinked and global capitalist system that has produced it throughout the twentieth century and into the twenty-first, the city cannot be reduced to a system or a semiology; and like capitalism as a whole, the city must be seen in terms of “enormity and complexity.”<sup>45</sup> In contexts that distinguish between urban reproduction and capitalist reproduction as a whole, the totality of capitalism is perhaps seen through an economic lens. Marxian scholar Leszek Kolakowski describes totality in *Main Currents of Marxism* as “Marx’s over-all analysis of capitalism” – and as the sum total of all economic actions great and small occurring across the globe.<sup>46</sup> Yet Lefebvre’s simultaneous development of both the Marxian notion of alienation and the spatial character of capital come together under the banner of his urban paradigm.<sup>47</sup>

Notably, Lefebvre was a thinker who “detested compartmentalization.”<sup>48</sup> For him, the drama of the urban phenomenon is inseparable from the alienations of capitalist modernity.<sup>49</sup> These alienations are both expression and cause of the social division of labor, and are intimately connected to the production of space and also to the production of knowledge. In the modern period, the fragmentation of knowledge evolves hand in hand with the fragmentation of society according to the laws of capital.<sup>50</sup> The pervasive nature of contemporary alienation encourages us to see totalities only through what Lefebvre calls “partial knowledge.”<sup>51</sup> “During the course of the nineteenth century, the sciences of social reality are constituted against philosophy which strives to grasp the global (by enclosing a real totality into a rational systematization).”<sup>52</sup> We thus begin to see the city as the sum total of distinguishable facts, we routinely approach totality only through partiality.<sup>53</sup> It is necessary, however, to disalienate ourselves from this method of thinking.

Instead of merely moving from disciplinary terrain toward interdisciplinarity, we must inhabit the shifting position of interdisciplinary thinking about the urban phenomenon and pull insights from various urban disciplines toward us. This is an intuitive act more than an intellectual one – intellection will find no solid ground on which to stand that does not actualize disciplinary prejudice about what the city is. What is needed is a provisional framework that can allow us to think further about what it means to combine disciplinary insights into the urban phenomenon. More than exploring what it means, we need to explore what is *looks like*. That is, digital humanities work provides a compelling way first to represent and simultaneously to actually produce and create interdisciplinary views on the city. What we need is a theoretical model that can allow for connections, de-fragmentations, dis-alienations, the relation of any single part to any other part of the urban phenomenon whatsoever. Digital tools hold the possibility for visualizing the Lefebvrian interrelationships between distinguishable – but not distinct – aspects of the cities through a structural and conceptual emphasis on layers of the urban phenomenon.

The final and third part of *Digital Cities* thus advances a theoretical framework that can articulate the value of digital urban projects that already exist, and also those that are yet to come. Readers will not find references to individual digital projects here. Instead, the focus is rather on a theory of digital cities. The reasons for this are two-fold: first, the book *Hypercities* (2014, Presner et al.) already provides a more thorough

exploration of a sampling of such projects, and any attempt here to replicate that work would be energy misspent; and second, the technology driving digital city projects is likely to change rapidly, making any such descriptions obsolete as new projects appear. Instead, the focus is on seeing the digital practice of “thick mapping” and “deep maps” from a Lefebvrian perspective. In addition to his general theorizations on interdisciplinarity, the French theorist’s articulation of what he called the levels and dimensions of the urban phenomenon can help us understand the value and potential of digital urban projects. Exploring this Lefebvrian perspective on such digital cities allows us to see how the sciences, social sciences and humanities can be returned to the urban totality from which they have been extracted.

## Notes

- 1 To take one example, the discipline in which I was trained, Spanish Language and Literature/Hispanic Studies, has long grappled with its identity, some seeing it as a language and literature field in the most traditional sense, with a conservative notion of literature limited to poetry, prose and drama alone. Even in the twenty-first century, there are some who actively seek to define and restrict the field through conservative understandings of canon even when these understandings run against the grain of their own thinking. See *Confronting Our Canons* (2010) by Joan Brown and the multi-authored response by Fraser, Compitello and Larson (2014). See also Ortega. The internal schisms of individual social science disciplines were mentioned in the introduction to the present project briefly where they were contextualized in terms of the distance between quantitative and qualitative approaches.
- 2 I have treated this feud in more detail in the introduction to *Toward an Urban Cultural Studies: Henri Lefebvre and the Humanities* (Palgrave Macmillan, 2015).
- 3 Collini xxv; Snow 3.
- 4 I discuss several examples of this preference in the aforementioned introduction to *Toward an Urban Cultural Studies*. See Snow 6–14.
- 5 Assessing Snow’s accomplishments, F. R. Leavis once remarked that “He can’t be said to know what a novel is” (Leavis 44–45). He was, then, a failed scientist and also a writer of questionable value (Collini xx–xxi).
- 6 Leavis’s lecture was seen as a “ferocious attack” (Collini xxix).
- 7 Original emphasis; Leavis 88, also 89. Also: “We have no other; there is only one, and there can be no substitute. Those who talk of two and of joining them would present us impressively with the sum of two nothings” (Leavis 93).

- 8 Interestingly, Leavis's distrust of the instrumentalizing logic of mechanism can be read along with the work of Lewis Mumford (see Introduction, Fraser, *Toward an Urban Cultural Studies*). He sought not to do away with science but to account for the excesses of a purely scientific worldview through humanistic complements: "A very strong, persistent and resourceful creative effort, then is desperately needed – a collaborative creativity to complement that which has produced the sciences" (Leavis 157); "I am not suggesting that we ought to halt the progress of science and technology, I am insisting that the more potently they accelerate their advance the more urgent does it become to inaugurate another, a different, sustained effort of collaborative human creativity which is concerned with perpetuating, strengthening and asserting, in response to change, a full human creativity" (Leavis 156).
- 9 The author there notes that the volume seeks to foment "genuine exchange" and draw on those who have "real competence in both domains": "*Switching Codes* is conceived as a response to this problem, an attempt to bring scholars and artists into more robust dialogue with computer scientists and programmers" (Coover 2).
- 10 The metaLAB series is edited by Jeffrey T. Schnapp with an advisory board of Ian Bogost, Giuliana Bruno, Jo Guldi, Michael Hayes, Bruno Latour, Bethany Noviskie, Andrew Piper and Mark C. Taylor and art direction by Daniele Ledda.
- 11 I dedicate more space to this in chapter 7 of *Toward an Urban Cultural Studies*, noting "Does DH work render capital flows more visible or does it hide them under the thin veneer of educational spectacle? These are, I argue, the questions that current DH praxis either ignores, under-analyzes or postpones." Note that Matthew Gold opens the introduction to *Debates in the Digital Humanities* with references to these larger questions.
- 12 Snow 22.
- 13 Gold x. See also endnote 3 of that chapter.
- 14 Leavis 146–47.
- 15 Ibid., 156.
- 16 Ibid., 158.
- 17 The notion that each "culture" is complementary to the other is developed also on page 61 of Leavis.
- 18 Gold writes that "rapid ascent of the digital humanities in the public imagination and the concomitant expansion of its purview have masked, and at times threatened to overshadow, decades of foundational work by scholars and technologists who engaged in 'digital humanities' work before it was known by that name" (x). See also Hockey; Kirschenbaum "What," "Digital," "So the Colors."
- 19 This citation ("pioneer of ...") comes from the Notes on Contributors in Schreibman, Siemens and Unsworth ix; see also McGann 3. Busa has written

the foreword to the volume *A Companion to Digital Humanities* (2004). In Busa's own words "During World War II, between 1941 and 1946, I began to look for machines for the automation of the linguistic analysis of written texts. I found them, in 1949, at IBM in New York City. Today, as an aged patriarch (born in 1913) I am full of amazement at the developments since then; they are enormously greater and better than I could imagine. *Digitus Dei est hic!* The finger of God is here!" (Busa xvi). Busa is referenced also by Matthew K. Gold ("Father Busa's digital concordances" x), who in an endnote explains that Busa "is generally credited with having founded humanities computing in 1949 when he began collaborating with IBM on a machine that could be used to create a concordance of all words ever published by Thomas Aquinas" (xiv).

- 20 Berry 3. On the origin of the term "digital humanities," see also Hayles. Kirschenbaum's wording is revealing of both a disciplinary attitude and also the larger extra-disciplinary forces in which all discussion of the humanities is necessarily immersed: "Digital thus replaces 'computing,' and 'media' has muscled in on 'humanities' ("Digital Humanities" 418). The case study of discussions of the evolution of the terms used at University of Virginia, as presented by Kirschenbaum ("Digital Humanities") and the reported origin of the term as produced via a discussion between John Unsworth and Blackwell acquiring editor Andrew McNeillie (Kirschenbaum, "So the Colors") are quite interesting.
- 21 Berry 3.
- 22 Gold x.
- 23 The work at the Institute for Advanced Technology in the Humanities (IATH) at the University of Virginia from 1993 on is crucial here, as is the more recent formation, at U.Va. of the Scholar's Lab. On the former see McGann's Introduction.
- 24 Gold xi. My own experience at cash-strapped public universities has been that such steep infrastructural requirements do indeed exist and that these do severely limit both what digital work is carried out and how ambitious the connections between computing and humanities can be.
- 25 See Fraser, *Toward*, chapter 7. As I explore there, the digital turn is prompting new assessments regarding the role of the humanities, the challenges they face and are perceived to face and their relationships to other disciplines: see Burgess and Hamming; Ellis; Fitzpatrick; Kernan; Perry; Svensson; Rosenbloom.
- 26 These similarities are specifically discussed in Fraser, *Toward*, chapter 7, but are drawn from Henri Lefebvre's *The Explosion* as well as the critiques made by critical pedagogues bell hooks and Paolo Freire. Lefebvre's critique of knowledge, discussed also in Fraser, *Henri Lefebvre*, roots these characteristically capitalistic attitudes toward knowledge in the context of

modernity understood as a class project that cohered and was emboldened during the nineteenth century in particular. The metaphor of students as receptacles for knowledge comes from both hooks and Freire who bemoan the practice of and ideological capitalistic motivation behind what they call “banking education.”

- 27 See Mary Burgan’s important book titled *Whatever Happened to the Faculty?*
- 28 Here I intend to draw from the Marxian line of thinking transposed to everyday life by Henri Lefebvre in his *Critique: daily life as a site of both colonization and resistance* (see also Merrifield’s *Metromarxism*).
- 29 Original emphasis, Moretti, *Distant*, 67. See also Moretti, “Homo Palpitans,” *Graphs Maps Trees*.
- 30 There are, of course, numerous issues with canon formation and the desire to enforce a narrow view of canon in the twenty-first century. The most pressing, from an interdisciplinary perspective, is that the literary canon is precisely that: literary. It does not account for work being done on popular music, films, graphic novels, video games and cultural production in a wider sense, as is suggested in the earlier parts of this book. To see how scholars are approaching these issues in the area of Hispanic Studies, for example, see Brown as well as Fraser, Larson and Compitello. Although Moretti frames his intriguing distant reading approach as one that renders close reading obsolete, these approaches are hardly incompatible. In the text earlier, I continue to discuss the problems of criticism without reference to Moretti’s argument, but I do think that humanities criticism is lacking in Moretti’s model, and he ends by instrumentalizing humanities texts – not that he has to, in order to accomplish his goal.
- 31 The passive reception of knowledge has long been denounced by critical pedagogues such as bell hooks and Paolo Freire, for example.
- 32 The quote is from Stephan Ramsay, cited in Gold x. It reappears in Liu 499.
- 33 For that matter, another key question is whether this new field deserves to be called the Digital Humanities when interdisciplinary contact between the social sciences and the humanities is unfolding along with technological and digital shifts. Anecdotally, I have witnessed the tendency of discussion of digital shifts to exacerbate faculty anxieties surrounding the relative positioning of the humanities and social sciences in a university setting and prefer the term Digital Innovation and Scholarship in the Social Sciences and Humanities for its ability to speak to interdisciplinary connections whose theorization is lacking.
- 34 Consider how this warning is voiced by David Bodenhamer, who writes: “As with many technologies, GIS promises to re-energize our description of the world through its manipulation and visualization of vast quantities of data by means previously beyond the reach of most scholars. Increasingly, humanists are acting on this claim, but in doing so, we again run the risk of portraying



the world uncritically, this time with a veneer of legitimacy that is more difficult to detect or penetrate. GIS is a seductive technology, a magic box capable of wondrous feats, and the images it constructs so effortlessly appeal to us in ways more subtle and more powerful than words can. In our eager embrace of GIS we have been swayed by its power but have little knowledge of how it developed or why” (17). One must be able, of course, to read these words of warning from a perspective that sees a value in interdisciplinary humanities–social science work. See also Gregory.

- 35 See also Liu (a talk from 2003 as cited in Berry 5) where he calls for the possibility of “new research units intermixing faculty from the humanities, arts, sciences, engineering and social sciences.” Liu continues: “How the digital humanities advances, channels, or resists today’s great postindustrial, neoliberal, corporate, and global flows of information-cum-capital is thus a question rarely heard in the digital humanities associations, conferences, journals, and projects with which I am familiar” (Liu 491). See also Kirschenbaum who writes that “digital humanities is also a social undertaking” (“What Is” 5). See also Liu (502) where the author mentions the “two cultures” specifically; as does Hockey in “The History of Humanities Computing” (3).
- 36 Berry (13) points to the need of the social sciences to engage with the “computational turn,” but his approach, understandably given his perspective, hinges on big data and prioritizes quantitative over qualitative research.
- 37 As May Yuan writes, “Humanities Geographic Information Systems (GIS) must incorporate the ability to represent narratives in GIS databases and map texts to offer the geographic contexts of stories. By doing so, we may be able to realize Sir C. P. Snow’s vision of ‘the third culture’ that bridges scientific and literary disciplines” (109).
- 38 Hockey 3.
- 39 Schreibman, Siemens and Unsworth xxiv.
- 40 The fact that the Marxian notion of ideology was at once a mental and material practice is key here; it is merely that Lefebvre has elaborated on Marx’s notions of alienation and ideology within the context of twenty-first-century urban capitalism that makes his work so appropriate for the matters at hand.
- 41 Lefebvre, *The Urban* 53.
- 42 *Ibid.*, 48–49.
- 43 *Ibid.*, 57. The entire quotation reads: “Nor is it reasonable to assume that our understanding of the urban phenomenon, or urban space, could consist in a collection of objects – economy, sociology, history, demography, psychology, or earth sciences, such as geology. The concept of a scientific object, although convenient and easy, is deliberately simplistic and may conceal another

intention: a strategy of fragmentation designed to promote a unitary and synthetic, and therefore authoritarian, model. An object is isolating, even if conceived as a system of relations and even if those relations are connected to other systems. [...] The concept of the city no longer corresponds to a social object.”

- 44 In addition to those mentioned in Chapter 1 of this book, consider also Andrew Lees who in his book *Cities Perceived: Urban Society in European and American Thought, 1820–1940* wants to “illuminate main currents of opinion among large numbers of social scientists, clergymen, medical doctors, architects, planners, administrators, novelists, publicists and other writers” (ix).
- 45 Lefebvre, *The Urban* 50; the quotation is from *The Urban* 46.
- 46 Kolakowski 256. “Throughout history material forces have dominated human beings, and in considering capitalist society each separate element must be related to the whole and each phenomenon treated as a phrase in a developing process. In *Capital* Marx more than once recalls this global aspect of his method of inquiry. No economic act, however trivial, such as the buying and selling that occurs millions of times a day, is intelligible except in the context of the entire capitalist system” (Kolakowski 256).
- 47 See a more extensive discussion of Lefebvre’s urban thinking and theorizations along these lines in Fraser, *Henri Lefebvre*, “Urban Cultural Studies,” *Marxism and Urban Culture, Toward an Urban*.
- 48 Merrifield, *Henri Lefebvre* xxxiii.
- 49 Urban alienation contains and perpetuates all other forms of alienation” (*The Urban* 92).
- 50 Julie Thompson Klein’s *Humanities, Culture and Interdisciplinarity* (2005) does not mention Lefebvre, but argues also that disciplinary knowledge and the borders between fields can be traced back to the modern period: see for example. 24: “The disciplining of knowledge was not a new phenomenon. Between the mid-seventeenth and late-eighteenth centuries, physics, biology and chemistry began assuming separate identities.”
- 51 Lefebvre, *The Right* 95–96.
- 52 *Ibid.*, 94.
- 53 It is here that Lefebvre’s thinking can be said to draw from his predecessor Henri Bergson’s philosophy that equated spatial or fragmentary thinking with the routine functioning of the intellect. For more on Lefebvre’s uncomfortable appropriation of Bergson, see Fraser, “Henri Lefebvre’s Uncomfortable.”

# 3

## Toward a Theory of Digital Cities

► *Abstract: Chapter 3: Toward a Theory of Digital Cities articulates how thick mapping of urban areas through digital projects realizes theoretical insights on the interdisciplinarity of the urban phenomenon in concrete ways. Discussion builds from Henri Lefebvre's work on the levels (and dimensions) of the urban to re-incorporate the urban temporality at the heart of the urban experience. Here the digital humanist concepts of thick mapping and deep maps – as explored in a number of recent laudable and high-profile publications – are interrogated for both their interdisciplinary bias and their potential to think more broadly about cities. In this way, the theory of digital cities returns the twenty-first-century city to its roots in nineteenth-century urban modernity and brings this Palgrave Pivot project full circle.*

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## What are digital cities?

Meaning is differential – and so in order to define what digital cities are, we must also provide a definition of what they are not. It may assist us to acknowledge that the term *digital cities* may mean one of two things. On one hand, in their recent book *Digital Cities: The Internet and the Geography of Opportunity* (2010), Karen Mossberger, Caroline J. Tolbert and William W. Franko focus on the relationship among urban, suburban and rural infrastructures, economic activity, and the way the rise of the Internet maps to “spatially patterned inequalities as the geography of opportunity.”<sup>1</sup> This is a perspective that situates the digital within an urban paradigm; the digital is thus seen as one part of a more complex urban world. On the other hand, works such as *Hypercities* (2014) – also by three authors: Todd Presner, David Shepard and Yoh Kawano – look at the way cities may be represented digitally. This is a perspective that situates the urban within a digital paradigm: the urban is thus seen as one part of a more complex digital world. Both perspectives are linked, such that neither can be meaningfully separated from the other. That is, the paradigm of the digital exists inside of the city, at the same time that the paradigm of the city exists inside of the digital. To see things in this way is to fold the digital and the urban together.<sup>2</sup> That said, the present effort focuses on the digital representation of cities, and not on the presence of the digital within the wider urban world.

At the grandest scale, in the confrontation between the digital and the urban we have the most recent manifestation of the entanglements – between science and technology on one hand and socio-political and economic power on the other – that have for centuries increasingly linked the lived spaces of urban and rural areas. In truth, technology and the urban phenomenon intersect in various interconnected ways. There is the historical view of the city’s mechanistic link to industrialization – the paleotechnic city described by Lewis Mumford.<sup>3</sup> There is Marx’s discussion of the circulation of capital – its second circuit devoted to scientific innovation and tied to the built environments of urbanized capitalism. Since the time of Marx, theorists from Georg Simmel to David Harvey have argued that capital has become increasingly urbanized, at the same time that our consciousness has become urbanized.<sup>4</sup> In addition, in the twenty-first century, digital media are increasingly central to the linkages between urban capital and urban consciousness. In this era, the production and consumption of digital tools and digital representations – the

availability of digital technologies and urbanites' unprecedented levels of access to them, levels that are still necessarily inflected by the uneven class geography of advanced urban capitalism – are unavoidably tied to wider social and cultural networks connected with capital accumulation strategies.<sup>5</sup>

Admitting that the interaction between the digital and the urban is complex, we must understand the term “digital” as one point of entry into both the historical development of scientific innovation in its tangible forms. The term must also refer to the philosophical and cultural (in this sense immaterial or more-than-material) aspects of technological ideation viewed over time. As a counterpart, here, to the concept of the digital, the term “urban” is of course similarly complex. Written, in part, to widen the scope of our approach to cities, Chapter 1 of this book explored their appeal as an interdisciplinary object of inquiry. As discussed there, since the nineteenth century, our understanding of the urban has evolved to include the multiple and overlapping material and immaterial aspects of our contemporary lives in cities. This book's Chapter 2 was dedicated to documenting the insufficiency of disciplinary knowledge – first, in general; second, in relation to digital work; and third, in relation to the urban phenomenon specifically. What remains to be discussed, however, is the way in which the implications of the city as an interdisciplinary object (Chapter 1) and the adoption of an interdisciplinary urban method (Chapter 2) can be fused in a theory that confirms the value – and articulates a potential direction – of digital urban projects (Chapter 3).

Here we continue with insights from Henri Lefebvre's urban theory set forth in Chapter 2 in order to set out the guidelines for a theory of digital cities as an analytical and critical project. Doing so will allow us to move on to consider what has been called thick mapping as the interdisciplinary future of the urban geo-humanities. It matters not whether we use the phrase “thick mapping” or “deeps maps” to describe this future; in each case we are talking about inherently interdisciplinary projects that bring together various disciplines through combinations of spatial data and narrative. These are necessarily layered projects, whether we imagine those layers in interdisciplinary terms or not. This part of *Digital Cities* thus seeks to build on Chapters 1 and 2 in order to articulate how digital projects in particular have the potential to resonate with layered approaches to the city and to the urban phenomenon, considered across disciplines. Such digital projects demonstrate the possibility of

a concordance between our chosen object (the complexity of the city) and our chosen method (an interdisciplinary and digital approach to the urban phenomenon).

A large number of recent approaches to the city have taken a broad view that implicitly or explicitly embraces interdisciplinary perspectives and the relevance of cultural and representational issues.<sup>6</sup> But in particular, it is helpful to consider the urban as a series of conceptual levels or planes. Already this idea draws from a powerful metaphorical prompt that imagines the city in visual terms as if another layered construct – the folios of a printed book, a ream of sheets of paper, a block of mica, any visual metaphor you like. But understand these are only metaphors. The urban is more than merely visual in nature. As a visual metaphor, the notion of “levels of the urban” does not capture the essence of the urban phenomenon, but it can nonetheless assist us in thinking through their interdisciplinary resonance. Whatever layered metaphor we might choose, they all encourage us to imagine and visualize the complexity of the urban in a concrete way. This is unavoidably an analytical perspective on what cities are, one whose risk is that it may push some to see aspects of the city as discrete entities – each separate, or in principle able to be separated, from the others – when in truth such differentiation is impossible. Or rather, such differentiation is only possible to the extent that we accept a narrowing of the urban problem; only to the extent that we embrace a particular disciplinary approach to cities and minimize its relationship with other aspects of urban life.

In a sense that we might label as material, layers of the urban do not exist as such. They are a product of our thinking – our capacity for abstraction, our spatializing thought, our tendency as human beings to think only through static categories and our reluctance or difficulty in facing the challenges of installing ourselves in true temporality.<sup>7</sup> And yet, it is our capacity for abstraction that has in fact helped to create the modern city. It is our tendency to think in terms of space and not time that has long driven the engine of urban design.<sup>8</sup> So although layers of the urban do not exist in this simplistic material sense, in another contradictory or complementary immaterial sense they nevertheless do exist. Once we fully take on board the relationship between the material and the immaterial – whether one chooses to see that relationship in terms that are dialectical, historical, psycho-physiological, philosophical or quotidian – these layers have both an ontological and epistemological value. Whatever their origin, they do enjoy an existence as abstractions,

even though that existence does not exist outside of that of all other such layers. What is more, once externalized, these materially immaterial layers of the city function as tools that can assist us in our need to know, to understand and to make sense of urban complexity.

Henri Lefebvre's thinking is quite attentive to the contradiction noted earlier. He is widely known, and sometimes reductively seen, as a "spatial thinker" – a reputation solidified in the Anglophone reception of one of his major works, *The Production of Space* (1974) after its English translation in 1991 by Donald Nicholson-Smith. But he was equally a temporal thinker, or rather, one who could not conceive of space without conceiving also of time. Spatiality and temporality, for him, went hand in hand.<sup>9</sup> Whereas it would seem paradoxical to those taking a simplistic view of Lefebvre's work as "spatial" in nature, he nevertheless sought to question the static design and spatial nature of analytical thinking.<sup>10</sup> As a dialectician, he was particularly attuned to the interrelationship of space to time; and as an urban philosopher and theorist, he critiqued the way both visual and spatial regimes had been harnessed by bourgeois institutions and social forces in the modern period. From the nineteenth century onward, he argued, urban planning emerged as a bourgeois science predicated on a fragmentary and fragmented understanding of knowledge.<sup>11</sup> In this way, the capitalist production of space becomes a means of self-perpetuation, and a survival mechanism.<sup>12</sup> Because of the contradiction between space's dual roles as an exchange value (from the perspective of capital accumulation) and as a use value (for individual urban dwellers themselves), everyday urban life became a site for both colonization and resistance.<sup>13</sup>

In this context, Lefebvre's meditations on the urban phenomenon that include the notion of "levels" (and that of "dimensions") must also be seen in a complex and contradictory light.<sup>14</sup> Admitting his distrust of the rigid categories of analytical frameworks,<sup>15</sup> we see that he intends these terms not as precise instruments but as provisional tools whose use points to the complexity of the urban. Levels of the urban phenomenon are not mutually exclusive, there are no hard borders between urban levels. In addition, "Each level contains others, in a state of possibility."<sup>16</sup> Lefebvre explains this methodological tool in the following way:

*A level* designates an aspect of reality, but it is not just the equivalent of a camera shot of that reality. It allows for it to be seen from a certain point of view or perspective; it guarantees it an objective content. [...] Taken in its widest sense, the idea of *level* encompasses the idea of *differences between*

levels. [...] Wherever there is a level there are several levels, and consequently gaps, (relatively) sudden transitions, and imbalances or potential imbalances between those levels. Therefore this idea excludes the idea of the *continuous field*, although it is not incompatible with the ideas of general context, globality or sets. Levels cannot be completely dissociated one from the other. Analysis may determine levels, but it does not produce them; they remain as units within a larger whole. [...] The schematic of a scale or of a formal hierarchy of degrees is much too static. Although by definition they are distinct and are located at different stages, *levels* can interact and become telescoped, with differing results according to what the encounters and circumstances are. At one particular moment of becoming, in one particular set of circumstances, one level can dominate and incorporate the others. The idea of a structural set of precise and separate levels is untenable.<sup>17</sup>

Taken along with the urban theorist's extensively elaborated approach to cities, this notion of levels becomes an apt conceptual metaphor for the urban. This metaphor must be understood from both a spatial perspective and a temporal perspective.

Spatially, the metaphor of urban levels relies on an implicit material referent – anything, whether rock from igneous, metamorphic or sedimentary regimes, plywood as a product of industrial manufacture, or the skis hand-crafted by a remote trapper in the Siberian Taiga<sup>18</sup> – where physical layers of a given material can be so fused that the strength and character of the resulting compound exceeds exponentially that of the sum total of its individual layers. Once pressed, these layers of a material product are “units within a larger whole” or analytical abstractions that “cannot be completely dissociated one from the other.” But this material referent must be transcended in order to fully understand the metaphorical and methodological tool of the layer. There is a relationship among these layers that cannot be adequately described in spatial terms. Instead, the notion of layers implies the notion of time. “Although by definition they are distinct and are located at different stages, *levels* can interact and become telescoped, with differing results according to what the encounters and circumstances are,” Lefebvre insists. This interaction and telescoping condensation of layers is only possible in time.<sup>19</sup>

Similarly helpful is the notion of scale as developed by Lefebvre, which can help us think about layers in a broader way that includes but overflows the city itself as a material fact. In *The Urban Revolution*, the French theorist outlines three “levels” he calls G, M and P: “I distinguish a *global* level, which I’ll indicate with the letter G; a *mixed* level, which



I'll indicate with the letter *M*; and a *private* level, *P*, the level of habit-ing.”<sup>20</sup> Significantly, among these levels, Lefebvre privileges Level *M* (the urban level) as the “site and nexus of struggle” and the “terrain on which various strategies clash.”<sup>21</sup> Scale in this sense is not a physical layer but rather a temporal layer of sorts – the urban is a privileged layer within a much wider global production, at the same time that the urban can itself also be separated – by analysis – into a number of layers. What we are speaking about in each case is the necessity of using representational practices – practices that inform our conceptions of space and practices that inform our production of cities; our production of maps and visual representations on one hand and our collective production of built environments on the other – to understand the complexity of what we might otherwise take as a single visual realm or a continuous field. This complexity stems from the fact that it is challenging for representational models of experience to capture the nuanced and continuous interaction between space and time.

For this reason, the interdisciplinary future of the urban geo-humanities is thus to be found in digital cities projects. Whether they are more or less complex, these projects can move us closer toward representing the interaction between the spatial and temporal complexity of lived urban experience; they can put aspects of the interdisciplinary city into relationships with one another that are not linear but rather shifting, adaptive and interactive; they can break down the hard barriers between disciplinary methodological approaches to the urban. Although it has not been systematically approached from a Lefebvrian perspective, thick mapping – the term that has gained cache in the current landscape of digital humanities – is, in my view, a potential realization of the French thinker's materially immaterial and layered approach to the urban.<sup>22</sup> It has the potential to render this kind of theoretical urban thinking visible, just as it promises to reconcile disciplinary insights on the urban phenomenon. As the next section explores, thick mapping is ultimately a metaphor for the very urban interdisciplinarity that this book has traced throughout its various parts.

## Thick mapping as urban metaphor

Because this book is written for the broadest of possible audiences, it makes sense to contextualize the notion of thick mapping within

a historical trajectory. In truth, it relies on a much more concrete and historical form of representation that is necessary to explore: Geographic Information Science (GIS). As a form of spatial representation that can be more crude or more complex but that remains always a representation, GIS needs to be understood as a technology in two complementary ways: first, and most concretely, as a digital tool that can be employed in the production of projects (a material technology); second, and more conceptually, as a digital method that can be harnessed as a way of visualizing the less concrete connections between aspects of the urban phenomenon as an interdisciplinary object (an immaterial technological advance in knowledge). For our purposes, one of the most important aspects of GIS is its layer structure. As Gary Lock writes, “The layer structure of GIS also allows the deconstruction of the physical world into elements that can be re-classified and re-configured through layer-based analysis.”<sup>23</sup> In light of the previous section of this part of *Digital Cities*, the Lefebvrian resonance of this statement should be clear. “The power of GIS for the humanities lies in its ability to integrate information from a common location, regardless of format, and to visualize the results in combination of transparent layers on a map of the geography shared by the data.”<sup>24</sup> Applied to digital projects, rendering “layers of the urban” as concrete allows us to externalize and thus see the limitations of our spatialized thinking and seemingly autonomous disciplinary practices.<sup>25</sup>

It is important for readers from across the disciplines to understand that geography is not synonymous with GIS. That is, there is a tendency in literature on the digital humanities to discuss GIS technology as if its own limitations are those of the wider field. For example, the statement that “GIS has difficulty handling time” is perhaps true.<sup>26</sup> GIS is a form of spatial representation whose connection to time is perhaps necessarily secondary. But to equate the field of geography with this same assessment of a specific technology is a mistake. To do so is to ignore the development of human and cultural geography since at least the 1920s,<sup>27</sup> just as it is to misunderstand the relationship between the increasingly similar research methods of both humanists and social scientists in general. The prominence of terms such as the “spatial humanities” obscures the way in which human and cultural geographers have been thinking along similar lines as humanities scholars for decades, at the very least.<sup>28</sup> To say that “For the humanist, space is not only physical space but occupied space, or place, and the concept, like

that of time, exists not simply in a real world but in memory, imagination and experience”<sup>29</sup> is at once to take a completely naïve view of social science. Geography in particular – but also sociology, anthropology and so on – has sustained strong traditions respecting the nuanced relationships between space and time, between physical space and cultural or social space. This work can be said to have been going on for 100 years, in fact, if we begin with the foundational work of Carl Sauer in the 1920s.<sup>30</sup> Following the lines of Sauer’s thought, human and cultural geographers have developed a more qualitative strain of the field that is just as attentive to time as to space and that understands landscape itself as a form of cultural production – as a cultural activity or a human work.<sup>31</sup>

Now, although geographers and humanities scholars may have been thinking along similar lines, these lines are far from being identical. The best argument that can be made by humanists for the value we add to the spatial sciences is not socio-cultural in a broad sense but instead has to do with our training as interpreters of complex artistic and narrative texts. The full breadth of humanistic approaches I mean to reference in this argument seldom appears in work on the spatial or digital humanities. Instead, such work is driven forward by a discourse that – to be blunt, quite myopically – tends to equate “humanities” with the discipline of history alone.<sup>32</sup> If one were to believe that geographers are purely spatial in their focus, then history would certainly be the perfect corrective: but despite their frequent appearance and implicit resonance in academic discussions, both of these are imprecise and even erroneous assertions. Readers must understand that, in what follows, I do not want to dispense with history as a key disciplinary component of digital work – far from it. Instead, I want to point to the fact that the full breadth of the humanities has been ignored in many interdisciplinary humanities–social science approaches.<sup>33</sup>

In the context of just such a disciplinary meditation, the description in the introduction to *Deep Maps* (2015; David Bodenhamer, John Corrigan and Trevor Harris, eds) – no doubt a splendid and welcome text – implies a revealingly narrow conception of the type of scholarship in which geographers are actually engaged, just as a narrow identification of humanists with historians alone:

A deep map is a finely detailed, multimedia depiction of a place and the people, animals, and objects that exist within it and are thus inseparable from the contours and rhythms of everyday life. Deep maps are not confined to the

tangible or material, but include the discursive and ideological dimensions of place, the dreams, hopes and fears of residents – they are, in short, positioned between matter and meaning. They are also topological and relational, revealing the ties that places have with each other and tracing their embeddedness in networks that span scales and range from the local to the global. The spatial considerations remain the same, which is to say that geographic location, boundary and landscape remain crucial. What is added by these deep maps is a reflexivity that acknowledges how engaged human agents build spatially framed identities and aspirations out of imagination and memory and how the multiple perspectives constitute a spatial narrative that complements the prose narrative traditionally employed by humanists.<sup>34</sup>

This is in truth a welcome argument on its own terms, but approached from the broadest of interdisciplinary perspectives – and to the degree that it is taken as representative of those perspectives – it is one that recapitulates a limited understanding of humanistic work. In addition, it risks misrepresenting the cultural directions of geographic inquiry. These two points deserve elaboration: first, the geographical; second, the humanistic.

Despite the fact that the authors frame the positive qualities of deep maps as something that can only be contributed by historians,<sup>35</sup> in the interests of interdisciplinarity it is necessary to risk repetition and insist once again that human and cultural geographers have been actively researching precisely this same question for half a century, if not arguably more. Understood broadly, the nuanced field of geography itself is already committed to “a reflexivity that acknowledges how engaged human agents build spatially framed identities and aspirations out of imagination and memory.” Geographers have already been investigating spatial narratives, and many have been increasingly turning to humanistic texts – with the study of film being perhaps more prominent than literary narrative *per se*<sup>36</sup> – and also to historical methods. It certainly makes sense to acknowledge the “spatial turn in the humanities” and the “spatial turn in history” here – as have many humanists who are becoming interested in geographical methods.<sup>37</sup> But without a complementary understanding of the way each field is moving toward the other, we risk reaffirming the primacy of one discipline over another. In this sense, even those discussions of digital humanities projects that emphasize the value of different disciplines have left the actual challenges to interdisciplinary collaboration undressed to a large degree.<sup>38</sup>

An equal point of concern is how the above quotation from *Deep Maps* – again, taken as representative of the current state of interdisciplinary collaboration at the widest scale – misrepresents what humanists do. Although I agree somewhat that an advantage of deep maps is that they can represent “how the multiple perspectives constitute a spatial narrative that complements the prose narrative traditionally employed by humanists,” what is of concern is that the category of “humanists” is linked with prose narrative alone. This implies, once again, a bias that links “humanists” with “historians.” If we are really concerned with linking the humanities and the social sciences – and, given our current aim, understanding the urban phenomenon from a broad interdisciplinary perspective outlined in previous sections of this book – we need to think not of historians alone but at once also of literary scholars. Even in their most traditional formulation, literary scholars have always studied not merely prose narrative but also poetic and dramatic forms. But increasingly – throughout the entirety of the twentieth century – scholars from traditionally literary fields have been researching audio-visual and, more recently, digital media, including painting, film, photography, popular music, videogames and more.<sup>39</sup> This understanding needs to be systematically built into any theoretical understanding of the multidimensionality of thick mapping or deep maps. If it is not – and I insist that to date it has not been – then we have not really succeeded in fashioning an interdisciplinary approach to digital cities.

Even if the role of the humanities writ large has been somewhat unacknowledged, work on digital mapping has been able to consistently point to the need to combine both qualitative and quantitative thinking and to bring together multiple perspectives.

A humanities GIS-facilitated understanding of society and culture may ultimately make its contribution in this way, by embracing a new, reflexive epistemology that integrates the multiple voices, views and memories of our past, allowing them to be seen and examined at various scales; by creating the simultaneous context that we accept as real but unobtainable by words alone; by reducing the distance between the observer and the observed; by permitting the past to be as dynamic and contingent as the present.<sup>40</sup>

In their *Hypercities*, Todd Presner, David Shepard and Yoh Kawano likewise posit digital mapping as both a qualitative and quantitative pursuit.<sup>41</sup> Thick maps are in part an acknowledgment of the connections between space and time and a reminder that it is necessary to think through evolving temporality instead of through static forms:

Thick maps are conjoined with stories and stories are conjoined with maps, such that ever more complex contexts for meaning are created. As such, thick maps are never finished and meanings are never definitive. They are infinitely extensible and participatory, open to the unknown and to futures that have not yet come. And perhaps most importantly, thick maps betray their conditions of possibility, their authorship and contingency, without naturalizing or imposing a singular world-view. In essence, thick maps give rise to forms of counter-mapping, alternative maps, multiple voices, and on-going contestations. Thick maps are not simply “more data” on maps, but interrogations of the very possibility of data, mapping, and cartographic representational practices. In this sense, “thickness” arises from the never-ending friction between maps and counter-maps, constructions and deconstructions, mappings and counter-mappings.<sup>42</sup>

We need to understand that this importance of temporality is not itself a product of one discipline. Contemporary geography is very aware of the significance of time, as are history and the literary humanities. Whatever its source, it is the inclusion of narrative and temporal interpretation that breathe life into thick maps.<sup>43</sup>

While it is true that two-dimensional representation risks the static poses of spatialized thought, thick maps – understood from a Lefebvrian perspective on levels of the urban phenomenon – hold a potential to return us to time through their complexity. “Fundamentally, spatialization reduces data dimensionality by compressing multidimensional variables into two-dimensional displays.”<sup>44</sup> What we need, and what thick mapping provides, is a methodological tool, a technological tool – the manifestation of a theoretical concept and a visible layered construct – that serves as a metaphor for the multidimensionality of the urban phenomenon. We need such interactive representations to assist us in telescoping into time, telescoping through levels or layers of the urban. With this in mind, it is crucial that “thick maps are never finished”;<sup>45</sup> just as it is key that “Thickness means extensibility and polyvocality: diachronic and synchronic, temporally layered, and polyvalent ways of authoring, knowing and making meaning.”<sup>46</sup> No matter whether one is speaking of digital projects specifically or any humanities or social science discipline, time and space cannot be severed from one another. By exploring space, we launch into an exploration of time, and by thinking temporally we must necessarily think space.

Most important is this: just as the “levels of the urban” theorized by Henri Lefebvre each contain the others, each of the disciplines involved in deep maps also contain the others.<sup>47</sup> Each of the layers in a digital

city project is thus similarly an abstraction: but properly understood as abstractions, they form a theoretical model that can help us to visualize the interconnectedness of all aspects of the urban phenomenon. This theoretical model may then be applied to specific circumstances and research questions of urban life in a given place or time – or in multiple places and multiple temporalities.

To return to the notion of the city as an interdisciplinary object foregrounded in Chapter 1 of this book, we must note the simultaneous importance of both space and time for the figure of the flâneur – so celebrated by Baudelaire and Benjamin,<sup>48</sup> and reappropriated and embodied by urban groups such as the Situationists in their psychogeographical practice of *dérive*.<sup>49</sup> We need to remember the need to think the city both spatially and temporally as noted by Henri Lefebvre, Jane Jacobs, David Harvey and more [...] But while the discussion of HyperCities notes their relevance to duration and time,<sup>50</sup> their insistence upon multivocality,<sup>51</sup> the notion of disciplinarity or interdisciplinarity is still insufficiently explored.<sup>52</sup> We must remember, as intimated in Chapter 2 of this book, that disciplines shape our understanding of reality and encourage the division of a fluid reality and lived experience into areas that appear to be relatively autonomous but that are in truth each implied in the others.

Digital projects are representations, but they are not merely representations. They are representations just as the real is itself a representation, just as language and knowledge are themselves representations but simultaneously realities. This is an assertion that speaks to insights from both humanities and social science work on the urban. *Digital Cities* projects are about finding the representation in the real, and finding the real in the representation. They promise to establish a point of reference for the whole of scholarly work on the city, folding material and immaterial components together and allowing us to visualize their inadequacies as our own conceptual and disciplinary flaws. They will be all the more valuable – all the more faithful to the interdisciplinarity of the urban phenomenon – to the degree that they structure layered thinking into their conception and design.

This book has not sought to outline one model that will serve for all digital urban projects. Instead, it has sought to expose the insufficient attention that has been given to disciplinary formations of knowledge and argue for the impact that disciplinary thinking has on how we conceive of our object, our methods and our theories. If *Digital Cities: The Interdisciplinary Future of the Urban Geo-Humanities* has a contribution

to be made, it is a call for all of us to think more broadly about what disciplinarity means. It has been common and perhaps even fashionable for scholars writing on digital projects – whether thick maps, deep maps or any other term – to tout the contribution of a single discipline to this interdisciplinary enterprise. Above all else, the trend has been for historians in particular to showcase how they hold the potential to “add” history and time to geography. Historians should be part of this shared interdisciplinary digital future, but the mistake is to work at a scale focusing on the boundary between two disciplines. Instead, we need to look at the boundaries between and within all disciplines; we need to understand each discipline as a point of entry into all other disciplines, each layer of the urban as a point of entry into all other layers. Focusing on only two disciplines allows for myopic presentations of what each discipline can contribute; the contribution of one discipline is made necessary only through the reduction of another, while marginalizing a third. For example, as we have discussed in passing: space becomes the domain of geographers, whereas time is the domain of historians, with the arts, literature and culture left at the margins.<sup>53</sup> None of this reduction allows for true interdisciplinarity to flourish. True interdisciplinarity understands that disciplines are not internally homogeneous, nor bounded, nor continuous through time. Instead, they are each a social construction: made and sustained by communities and individuals, negotiated differently in diverse circumstances and sculpted to suit a particular need.

*Digital Cities* has asserted that this social practice of disciplining knowledge has played a role in the construction of the city as an object of inquiry (Chapter 1), in the disciplinary conflicts that have historically shaped feuds regarding the humanities and the social sciences as well as our received notion of what the digital humanities actually are (Chapter 2), and finally in the promise and potential we attribute to the future of digital mapping projects (Chapter 3). The question of how digital urban projects will evolve is still an open one.

Like Italo Calvino’s traveler in the book *Invisible Cities* – to return to discussions from the Introduction to the present book – we do not yet know the digital city awaiting us along our route. We wonder what the palace will be like, the barracks, the mill, the theater, the bazaar... we are necessarily uncertain what form these digital projects will take. Only one thing is certain: these projects will necessarily reflect our own thinking about the interaction between disciplinary formations of urban



knowledge; they will represent and restage our disciplinary prejudices. *Digital Cities* do, however, create an opportunity: to think differently about our disciplines and simultaneously about the complex nature of the urban phenomenon. For in the end we must do both simultaneously.

## Notes

- 1 Mossberger et al. 10.
- 2 See particularly relatively recent work by Souza e Silva, A. and D. M. Sutko.
- 3 Lewis Mumford is briefly discussed in this work's first chapter. See also Fraser, *Toward an Urban Cultural Studies*.
- 4 Georg Simmel and David Harvey are briefly discussed in this work's first chapter.
- 5 This social use of technology is not unrelated to the patterns of alienation and dis-alienation about which Henri Lefebvre wrote.
- 6 This list includes Amin and Thrift, Blum, Dear, El-Khoury and Robbins, Goonewardena, "The Urban," Highmore, Lindner, Parker, Philo and Kearns, Sloan, Straw and Boutros, Van Veen. See also Sullivan.
- 7 I mean here to refer to see Fraser, *Encounters with Bergson(ism) in Spain* and "Toward a Philosophy of the Urban, Henri Lefebvre's Uncomfortable Appropriation of Bergson."
- 8 In brief, I refer to what Henri Bergson calls "intellection." See Bergson, "Introduction," *Time and Free Will, Matter and Memory* and *Creative Evolution*. Henri Lefebvre's view of space, particularly as articulated in *The Production of Space* is to see space at once at both material and immaterial levels, which are united in spatial practices.
- 9 Consider these quotations from Lefebvre's *The Production of Space*: "Time is distinguishable but not separable from space" (175); "time is known and actualized in space, becoming a social reality by virtue of spatial practice. Similarly, space is known only in and through time" (219); and "the history of space should not be distanced from in any way from the history of time. ... It begins, then, with the spatio-temporal rhythms of nature as transformed by social practice" (117).
- 10 This is particularly palpable in Rhythmanalysis, which was intended as a fourth volume of Lefebvre's *Critique of Everyday Life*.
- 11 Lefebvre, *The Right, The Urban*.
- 12 See in particular Lefebvre, *The Survival of Capitalism*.
- 13 Lefebvre, *The Right, Critique of Everyday Life* vol. 2.
- 14 Lefebvre, *The Urban* 77–102; *Critique* (v. II) 118–25 and 148–56; *The Right* 111–17.

- 15 See in particular his *Rhythmanalysis*, also Fraser, “Introduction,” *Henri Lefebvre and the Spanish Urban Experience*.
- 16 Lefebvre, *Critique of Everyday Life* vol. II, 120.
- 17 Original emphasis, Lefebvre, *Critique of Everyday Life* vol. II, 119.
- 18 See the documentary film *Happy People: A Year in the Taiga* (2010), narrated and edited by Werner Herzog, co-directed by Herzog and Dmitry Vasyukov.
- 19 The use of the word “telescoping” and the temporal character of layers is yet another Bergsonian inheritance in the work of Lefebvre. For more on Lefebvre’s debt to Henri Bergson see Fraser, *Encounters* and “Henri Lefebvre’s Uncomfortable.”
- 20 Lefebvre, *The Urban* 78. See also Presner et al. 55–56, where the relevance of this Lefebvrian notion can be seen.
- 21 Lefebvre, *The Urban* 91, also 87. As I put it in an earlier work “While scholars have importantly begun to pay more attention to Lefebvre’s writings on scale (Kipfer 2009 is a notable example), I am interested in how Lefebvre’s discussion of these three scalar levels (G, M, P) as it appears in *The Urban Revolution* (2003, earlier) expresses the major push of his thinking more generally. As he explains in the second volume of his *Critique of Everyday Life* (2002), levels are an attempt to capture the complexity of the urban without resorting to the excessive and rigid nature of hierarchical system. [...] Especially as scale continues to be a source of much scholarly debate (as seen in Roger Keil and Rianne Mahon’s recent volume *Leviathan Undone? Towards a Political Economy of Scale* 2009), it is important to recognize the broad resonance of Lefebvre’s position with theorists who similarly seek to envision matters of scale not as rigid or fixed categories but instead as social constructions (Howitt 1993, 2003; Marston 2000; Brenner 2004). Lefebvre’s level M can be seen as a complement to what Marston, Jones III and Woodward (2005) advocate as a “flat ontological” approach grounded in the “site (see Escobar 2007; also Marston, Jones, Woodward 2007)” (Fraser, *Henri Lefebvre* 19). See also Brenner and Elden, Brenner, “The Urban.”
- 22 On GMP relations see also Presner et al. 55–56.
- 23 Lock 94.
- 24 From the introduction to Bodenhamer et al. *The Spatial* ix.
- 25 The notion of layers is discussed briefly in Bodenhamer, *Deep Maps* 21–22.
- 26 *Ibid.*, 2.
- 27 The reader should be referred here to the work of Carl Sauer whose 1925 essay “The Morphology of Landscape” is largely heralded as a privileged step toward contemporary cultural geography – perhaps starting with Don Mitchell’s accessible primer *Cultural Geography*. In addition, chapter 4 of my *Understanding Juan Benet: New Perspectives* (2013) focuses on Sauer and his generalized legacy in the work of David Harvey and Henri Lefebvre, even if

- as a step toward understanding the role of landscape in the work of one of Spain's most enigmatic twentieth-century novelists.
- 28 The statement in the Introduction by Bodenhamer et al. (*Deep Maps*, 2) is particularly misrepresentative. "Humanists view the world as extremely complex, with endless connections among events and actors and multiple causes for effects that exert continuing influence on the world of thought and behavior. This sense of web-like interrelatedness plays itself out within two dimensions – space and time. Although the past is always bound by these two elements, humanists often treat them as artificial, malleable constructs."
- 29 Ibid.,.
- 30 Carl Sauer is regarded as a leading figure in if not the founder of cultural and human geography.
- 31 Introducing readers here to the rich traditions of human and cultural geography in any meaningful format would be impossible. For more information, the reader should consult Don Mitchell's *Cultural Geography*, the wonderful article on the social construction of scale published by Sallie Marston (2000) and the pages of journals such as *Social and Cultural Geography*, which has recently been officially linked to the increasingly international organization of the Association of American Geographers. See also Mitchell's *The Right to the City*.
- 32 This is also visible in Bodenhamer et al., *Deep Maps*, 2–3.
- 33 This is intended, in part, as a complement to the assertion in Chapter 2 of this book that (drawing on Alan Liu) social sciences have also been largely left out of the work of digital humanists.
- 34 Bodenhamer et al., *Deep Maps*, 3; see also 20.
- 35 This is frequent in the literature. See also the essay by Ethington and Toyosawa wherein it is written, "What we mean by *deep map* is one that is historically deep. Its historical depth gives it a narrative dimension" (72).
- 36 See the two-part inaugural editorial launching the first volume of the *Journal of Urban Cultural Studies* for a closer consideration of these issues (Fraser, "Urban Cultural Studies").
- 37 See Harris, Rouse and Bergeron on one hand, and Ayers, respectively, both in Bodenhamer et al. The earlier moment associated with the "spatial turn" in the humanities involved humanists who turned in the 1980s–1990s to selected works by Henri Lefebvre (e.g. *The Production*), David Harvey (e.g. *The Postmodern Condition*) and Edward Soja (*Thirdspace*, "Socio-Spatial"); see also Manuel Castells and John Mollenkopf, as well as Neil Smith.
- 38 This idea is explored more thoroughly in Chapter 2 of the current book project.
- 39 I count myself in this group, having published in the *Journal of Gaming and Virtual Worlds* (Fraser, "Why the Spatial"), and drawing on work by Aarseth "Allegories," "Quest Games." See also work on video games that is quite

- relevant to the humanities by Fernández-Vara, Zagal and Mateas, Grodal, Guenzel, King and Krzywinska, Holland, Jenkins and Squire, Juul, Martin, Newman, Nitsche, Noveck, J. Taylor, T. L. Taylor, Wolf, and Wolf and Perron. Chapter 1 of this book includes further relevant notes on this subject.
- 40 Bodenhamer, *The Spatial*, 29. See also Presner et al., “On its most basic level, ‘thick mapping’ refers to the processes of collecting, aggregating, and visualizing ever more layers of geographic or place-specific data. Thick maps are sometimes called ‘deep maps’ because they embody temporal and historical dynamics through a multiplicity of layered narratives, sources, and even representational practices” (*Hypercities* 17).
- 41 “Until recently, mapping in the humanities was deeply bifurcated between what might be called, on the one hand, a ‘quantitative’ approach using data analysis and visualization techniques adopted from the field of Geographical Information Systems (GIS, for short), and, on the other, what might be called ‘metaphorical mapping,’ variously articulated in cultural studies through theorizations of space and place, critiques of spatial systems, and critical cartography studies. The first is often dismissed as ‘positivistic,’ as uncritically importing methods of the social sciences into the interpretative and critical domain of the humanities with insufficient regard to the ideological biases of such information and visualization systems. At the same time, the second is dismissed by practitioners of spatial analysis on the grounds that it never actually engages with any spatial methods or mapping tools, neither designing environments for analysis nor creating ‘humanistic’ systems for probing spatial relations” (Presner et al., 49).
- 42 *Ibid.*, 19.
- 43 This is not merely objective representation, there is a need for interpretation. “The central role of interpretation in this process is a new tension when applied to the quantitative basis of digital representation and one that as humanists we are best placed to exploit” (Lock 105).
- 44 Yuan 111.
- 45 Presner et al. 19. Also: “A HyperCity is a real city overlaid with thick information networks that not only catalyze the present but also go back in time to document the past and go forward to project future possibilities. HyperCities are always under construction” (Presner et al., 6).
- 46 *Ibid.*, 18.
- 47 Readers who may have started with this Chapter 3 of *Digital Cities* are encouraged to turn to Chapter 2, where these notions are discussed at length.
- 48 Here it is also relevant to recall the importance of text and image combinations for the flâneur (Benjamin 419).
- 49 This topic is emphasized in Harris (2015) 31–33.
- 50 Presner et al. 9.

- 51 In addition to what has already been noted in the body text, see Presner et al. on HyperCities' emphasis on a "multiplicity of interpretations rather than simply reporting facts or considering maps as somehow given, objective or complete" (19).
- 52 Although Presner et al. may start with hypermedia and a Language and Literature understanding of cities (14), they do not emphasize an interdisciplinary humanities–social science understanding of what they are (see this book's Chapter 1).
- 53 Although I have addressed this earlier, with the intention of arguing how pervasive an undercurrent it is, as a final example, one of the most reductive statements is the following: "All spaces contain embedded stories based on what has happened there. These stories are both individual and collective, and each of them link geography (space) and history (time)" (Bodenhamer, *Deep Maps* 9).

## Epilogue: Bridged Cities (A Calvino-esque Tale)

**Abstract:** *The concise epilogue is offered as an inadequate tribute and as a companion vignette to those included in Italo Calvino's Invisible Cities. Here, the city of Alif is one of many "Bridged Cities" in whose creation, rise and fall can be seen metaphorically the ontological primacy of urban totality. In the end, if Digital Cities are the future of the urban geo-humanities, they do not signal a break with previous investigations into the cultures of cities, but instead articulate a collective project in which the contradictory insufficiencies and potentialities of previous disciplinary work on the urban phenomenon still persist.*

Fraser, Benjamin. *Digital Cities: The Interdisciplinary Future of the Urban Geo-Humanities*. Basingstoke: Palgrave Macmillan, 2015. DOI: 10.1057/9781137524553.0007.

Never before having developed a project from the ground up, the royal planners commissioned to build the city of Alif chose a site midway along the revered river bearing the same name. This would be, they decided, a self-sufficient city, one that would exist in relative autonomy to the vast transportation and information networks that crisscrossed imperial lands. Nestled in a crescent-shaped valley, the location offered safety and seclusion, easy access to water and, beyond the hillsides themselves, the economic promise of nearby woodlands and quarries. Keeping in mind the lessons of other river cities, whose unplanned buildings had spread from one bank to the other seemingly without reason, they decided to begin construction on both shores simultaneously.

In a dream, the head royal planner had seen Alif as a city of mirrors, which he took for a symbol of symmetry and thus beauty. Using the river as a natural line of demarcation, on one side the team of royal planners had ordered built a complex of palaces and mansions whose only restriction was their height, which could be no taller than the hills the surrounding landscape had provided as natural walls. On the other side of the river were built barracks for the commoners. Along with the barracks were also built small shops to encourage commerce, artisan workshops to promote autochthonous crafts, and the pens and corrals necessary for livestock, which were woven around and through a labyrinth of nearby residences and storefronts. To link each side of the river, the planners ordered built a magnificent bridge, with rocks from the north-facing hillside, engraved wooden railings whose raw materials offered themselves from the eastern forests and ironworks were forged in the workshops on the southern outskirts on the river's west shore. On the third day of each third month, a parade of visiting dignitaries summoned from the provinces would assemble on the bridge. Dividing into two groups, one for each side of the river, each tour would later argue that they were certain they had experienced the better half of the city.

Years went by and the city of Alif became the central trading post of the empire. Far and wide, all travelers knew that only there would they find the most ornate windpipes, the finest clay vessels for the commemoration of births, deaths and marriages and all manner of skins. One of the districts on the west side of the river had soon gained notoriety for an instructional method that had produced some of the most insightful royal advisers in history. All the while, the palace on the east side was growing in splendor and ornamentation, and came to dwarf the mansions,

expanding to almost fill, in the crescent valley. But as the decades came and went, with the great floods of Hamza and the storms of Dagesh, the river swelled. On both shores of the river, standing water pushed the royal planners' vision for the city upward instead of outward. A series of elevating ramps – internal to the palace and mansions, and external to the infrastructure on the commoners' side of the river – helped to push the vertical dimension of the city to its limits. The waterline of the rising Alif continued to creep each year, quite slowly but measurably, still, and the city's magnificent bridge was finally surrendered. Even this, however, could not detract from its fame. Now those who came to peer through the murky waters at the newly submerged and beautifully irrelevant bridge were not merely dignitaries but also commoners from up and down river, persons for whom the city's most revered architectural triumph assumed a properly religious significance.

According to the great book of records, there came a time when the city's planners – who were now under orders from the empire's royal advisers, many of whom had been born in Alif – decreed that rather than rebuild or replace the single magnificent bridge, a series of new bridges would connect the river's two shores. There were to be no restrictions concerning the materials used, the length or the number of the bridges. Moreover, all residents would be assured the right to build. The first bridge built was constructed to directly connect the bakeries to the palace pantry. The rest followed, and new connections between east and west were forged that worked to the benefit of all. The city's reputation grew exponentially in the arts, education, science and trade, perhaps even more rapidly than it had before the floods. In time the city's many bridges themselves became an attraction, and it was routine for royal parties to devolve into an argument about whether it was more splendidous to view the bridges from the palace's private balcony, from the livestock ramp at the southwestern corner of Alif or from below on one of the wealthy dignitaries' many riverboats.

It is also recorded in the great book that there came a point of architectural saturation where the bridges were so many, the connections linking both shores far too numerous, that Alif might as well have been a city built entirely on land.

Among the recorded histories and plans preserved in the great book – alongside the narrative descriptions of the river by visiting dignitaries and in particular one by a noted Alif-born emperor who found his way to the throne – there are poetic verses which capture the city both



at the height of its splendor and also throughout its decline. Of these lyrical and epic verses, one is written by the great-great-grandson of an ironworker who in his youth pulled carts of iron from the southern mines to a forge on the city's southern outskirts, where they became ornate handrails to adorn the city's first and most magnificent bridge. In one particular verse, renowned for its paradoxically grotesque and yet elegant uneven syllabic composition, the poet paints a vivid lyrical image of the vertical bridges of Alif as seen from below, while seated on an ornately crafted wooden bench in the very center of the city's long-dry riverbed.

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