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CONCEPTS
OF URBAN-
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HISTORY

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In history, cities and nature are often treated as two separate fields of research. »Concepts of Urban-Environmental History« aims to bridge this gap. The contributions to this volume survey major concepts and key issues which have shaped recent debates in the field. They address unresolved questions and future challenges. As a handbook, the collection offers a comprehensive overview for researchers and students, both from a historical and an interdisciplinary background.

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Urban-Environmental History as a Field of Research

Sebastian Haumann, Martin Knoll and Detlev Mares

Urban history and environmental history have been considered as two separate fields of research. In their long tradition, studies on past urban societies have predominantly been the domain of social and cultural history, concerned with spheres explicitly understood to be distinct from 'nature'. Meanwhile, environmental history, as it emerged during the last decades of the 20th century, has tended to conceive the city as a disruptive force and a cause of all kinds of threats to the environment. Although this juxtaposition may seem to rest on a rather crude simplification of the two strands of research, it has shaped the outlook and historians' interpretations of phenomena at the boundary of the urban and the environment.

However, in recent years, historians have increasingly linked both fields of research. Urban-environmental history contends that city and nature are inseparably intertwined. It understands the city as environment and the natural environment as an essentially urbanised phenomenon (Soens et al. 2019). It questions the very relevance of the boundary between the allegedly separated spheres and explores the many ways in which natural and social processes converge to form the city. This is more than to recognise that the city and the environment are interconnected, and yet these interconnections are important pathways into the inquiry of urban-environmental history. Infrastructures, the flow of matter, or cities as distinctive ecosystems, key topics in urban-environmental history, show cities as social *and* environmental entities, as objects of co-construction and co-evolution. The present volume provides the first systematic overview of the key concepts in this field of research.

Challenging the Nature-Culture Dichotomy

In Western thought, 'city' and 'nature' are conventionally understood as opposites. This has deep roots in judeo-christian traditions, in which humanity was conceived of as holding a divine mandate over 'nature', a 'mind' separated from the mundane constraints of the material world. From a materialist perspective,

Marxism also contributed to dichotomous thinking by explaining culture and history as the outcome of social forces, such as capital accumulation and class formation. Most recently, the ‘cultural turn’ has reinforced this separation from the opposite end. As Chris Otter states, the ‘cultural turn’ has produced a “radical form of dematerialization” (Otter 2010: 41). The intellectual separation is reflected in popular accounts, where the city is often portrayed as epitomising culture and modernisation. Urbanites have developed a particular lifestyle that is detached from the impositions of surrounding nature, so the argument goes. On this premise, urbanisation is either interpreted as overcoming restraints—as in the narrative of the mastery over nature—or endangering the environment—as declensionist narratives have it.

Over the last three decades, the dichotomy of a ‘cultural’ and a ‘natural’ sphere has come under attack. Conceiving human capacities as uncoupled from and superseding environmental constraints is seen as the root of severe misinterpretations (McNeill 2003; LeGain 2017). The development of cities, in particular, is found not to be a self-contained ‘cultural’ phenomenon, but to be dependent on and enmeshed with factors that have previously been idealised as ‘natural’. Consequently, urban-environmental history has been at the forefront of what has been dubbed the ‘material turn’. In an attempt to reconceptualise urbanisation processes, the material qualities of the environment have moved from being considered merely as a backdrop of urban development to a constituent force in the design and operation of essential functions of the city (Melosi 1993, 2010).

The assumption that city and nature are inseparably intertwined leads to a particular understanding of modernisation that breaks with both the idea of mastery over nature and declensionist narratives. Instead, urban-environmental history tends to assert that mutual interdependencies grew stronger over the past centuries and urban development “made them both broader and deeper—broader because more environments and natural resources were integrated [...], deeper because the range of linkages between humans and the natural world multiplied and expanded” (Pritchard/Zeller 2010: 85). Modernisation therefore is characterised by an ever more complex web of interrelations with the environment, which might be understood as ‘Technosphere’ (Otter in this volume). The increasing interdependence had a double sided effect. Human activities had a markedly increasing impact on the urbanised environment, while at the same time human life in cities became the more vulnerable the more it hinged on the integration of nature. The history of urban development and modernisation thus appears as quite the opposite of an increased separation of a ‘cultural’ from a ‘natural’ sphere, while seen from the angle of recent debates on the ‘Anthropocene’, human and non-human, urban and extra-urban agency have created a powerful ‘urban stratum’, in which the human species will leave its “mark as a major planetary event”, even after its extinction (Otter 2019: 324).

Key Topics

The ever more complex interdependencies between cities and the environment first became evident in the context of research on pollution, hygiene and epidemics, which often took its questions from social history. As early as 1967, Ilja Mieck analysed urban air pollution during the first half of the 19th century and described the attempts to regulate emissions. Similarly, scholars working on the history of urban planning, such as Anthony Sutcliffe (1981), included environmental issues in their studies from the angle of regulation. Other studies concerned with the socio-spatial organisation of cities revealed the impact of environmental factors which humans did not fully understand or control. This was the central point in Richard Evans' (1987) study on the Hamburg cholera epidemic of 1892. As research showed, even the consequences of man-made pollution proved difficult to counteract precisely because they resulted from social as well as chemical and biological processes (Mosley 2001; Platt 2005). The subsequent measures to cope with these challenges through sanitary reform and technological fixes, in particular infrastructural solutions, have become recurring topics of urban-environmental history (Melosi in this volume).

Beginning with William Cronon's *Nature's Metropolis* (1991), in which he analysed the symbiosis of Chicago's urban development and the ecological change of its hinterland, urban-environmental history has scrutinised how cities and their environments have shaped each other in reciprocal relationships. The provision of water and disposal of waste, the movement and distribution of foodstuff and livestock, prominent in Cronon's study, but also the consumption of energy and the transformation of matter are important issues. Methodologically, this interest was backed by approaches to account for energy and material flows and circulation (Weber in this volume), in particular in the concept of 'urban metabolism' (Fischer-Kowalski/Haberl 1993; Barles in this volume). Thus, the flow and circulation of materials from extraction and production through conversion and consumption and all the way down to recycling and the 'ultimate sink' (Tarr 1996) have become key topics of urban-environmental history.

To a significant degree, 'urban metabolism' is organised through infrastructure, in a sense which connects the issue of sanitation with that of circulation of matter and energy more generally. Taking a cue from the history of technology, the city appears as a node of networks through which the flows of water, foodstuff, waste, raw materials, but also gas and electricity were channelled. For the history of urban energy consumption Thomas Hughes' (1987) concept of 'large technological systems' proved particularly influential (Zumbrägel in this volume). Following up on Hughes, Dieter Schott (1999) aptly characterised modern settlements as 'networked cities', pointing to the essential role of infrastructure for the functioning of urban societies in both a cultural and material sense.

The focus on infrastructure highlighted questions about how social processes relate to material forces. On the one hand, the provision of water, for example, is governed by the built structure of water mains and reservoirs, which are capable of altering the hydrology of entire watersheds. Within the cities, the provision of water and other amenities often reflected and reinforced social stratification (Gandy 2002). Therefore, urban-environmental historians often assert that infrastructures are the materialisation of social relations and that they constitute strong path dependencies (Bernhardt in this volume). On the other hand, material forces frequently disrupted the normal operation of infrastructures and necessitated their continuous maintenance. But even the breakdown of infrastructures as well as other recurring threats, such as floods or harvest failures, were never the result of natural causes alone, but always socially constructed. Through the way urban societies interacted with the environment they produced specific risks (Collet in this volume).

The fact that risks were distributed unequally has become the focus of a broad debate on 'environmental justice'. Originally a political claim, historians have adopted the concept and raised questions about the unequal exposure to environmental hazards according to race, class and gender (Flanagan 2000; Luckin 2005; Pichler-Baumgartner 2015). In urban contexts, such inequalities are not only evident in the exposure to pollution, but also in the more intricate relationship of cities and their rivers. While rivers offer significant opportunities to urban societies, they also create formidable risks, in particular for those who had to settle in the floodplains. The ambivalent character of city-river relations makes them a pre-eminent topic of urban-environmental history (Lübken in this volume). In a pioneering project on the history of the Danube in Vienna, a research group around Verena Winiwarter has analysed the many facets in which fluvial dynamics were appropriated but also counteracted human intentions (Winiwarter et al. 2013). Studies which focus on rivers are particularly apt to reveal how natural forces are inseparably intertwined with humans' decisions and power relations.

In analysing the myriad ways in which social and environmental dynamics were enmeshed, urban-environmental historians did not lose sight of how cultural constructions structured these relationships. The aim to overcome the nature-culture dichotomy notwithstanding, most studies explicitly reflect on the very concepts that were and are applied to judge, evaluate and form the urban environment. Tim Soens et al. (2019: 19) recently acknowledged that "at some points in history, the city might have existed as an imaginary category, and from this imaginary idea of a 'city' (and of 'nature'), policies were conceived and technologies applied, 'as if the city (and nature) existed'". Because the cultural construction of 'the city' and 'nature' has been formative, e. g. in the creation of urban parks, it remains important to look into processes in which the relevant understandings and conceptions were constructed. Scholars have therefore begun to historicise

the ways in which past and present societies think about the relationship of urban development and the environment. They present notions such as ‘circulation’ (Weber in this volume) and ‘sustainability’ (Schanbacher in this volume) as constructions with a long history and reveal their often normative and prescriptive character—a fact that explicitly does not render them useless as analytical tools in historical research.

Just how relevant and instructive such constructions can be is evident in the current practice of conservation and urban heritage (Madgin in this volume; Toyka-Seid in this volume). In planning and governance, concepts such as ‘sustainability’ have gained significant influence on the ways in which a city’s past and its existing urban fabric are appropriated and revaluated. The way in which we as society think about the relationship between ‘city’ and ‘nature’ continues to have a decisive impact on policies and practices. Disseminating the knowledge of non-dichotomic concepts as developed in urban-environmental history can therefore enhance debates about the future development of cities. To this end, concepts of urban-environmental history might also be usefully applied in teaching history at school and university levels (Dinçkal/Mares in this volume).

Some of the research in urban-environmental history has been criticised for predominantly representing the experiences of cities in North-Western Europe and North America. Indeed, most research does focus on these regions, whereas urbanisation in other parts of the world has often been interpreted as insufficient or ‘catching up’ on Western models. The emerging research on cities in Asia, Africa or Latin America might lead to a more differentiated picture, even though London, Paris, New York or Berlin remain important references (cf. Melosi 2013). When scholarly attention is extended to the so-called ‘periphery’ in Southern and Eastern Europe it becomes clear that urban-environmental history needs to take into account very different paths of development (Liedtke in this volume). The history of the interdependencies between cities and the environment is also complicated by the need to take into account different types and sizes of settlements beyond the well-researched metropolises (Zimmermann in this volume). Finally, the topic of mobilities has inspired a powerful new conceptual paradigm in social science debates (Urry 2007), which however is ambivalent when applied to the history of urbanisation, be it with respect to demography, urban infrastructures or reorganised city-hinterland-relations (Knoll/Reith in this volume).

The topics outlined above have been central to much of the research on cities and the environment. Focussing on these topics has proven to offer valuable insights into how the history of cities and nature are inseparably intertwined. However, they represent a particular strand of research that has evolved within an informally organised, yet highly integrated international network of scholars which has shaped the field of urban-environmental history since the 1990s.

The Historiography of Urban-Environmental History

Already in 1974, the influential French historian Emmanuel Le Roy Ladurie had identified a set of topics within the young research field of environmental history in which the urban dimension figured prominently (Bernhardt 2001: 5). The range of topics included epidemic and climatic developments, unpredicted natural events, the destruction of nature caused by demographic developments, urban and industrial emissions leading to the pollution of water and air, and finally an overload of urban space by material structures, people and noise (Le Roy Ladurie 1974: 537). Cities became an issue in environmental history throughout the 1970s and 1980s, at least in Europe, while in North America the emergence of urban-environmental history as a field of research took a different course.

In Europe, research on the city and its socio-ecological problems tied in with the wider interest in the long-term social and economic history of cities (Mosley 2006). Premodern urbanisation was already considered to be “essentially environment-driven”, as David Nicholas (2003: IX) stated, and this intensified with modernisation. The socio-spatial patterns of urban development were related to environmental factors and research showed how different kinds of pollution affected urbanisation throughout the ages (Bernhardt 2001: 7). Apart from these approaches focussing on environmental problems and pollution, urban-environmental history also connected to debates about the management of resources in the ‘wooden age’ (Sombart 1928) and an interest in the making of networks of urban infrastructures which was established in economic history. In short, European urban-environmental history tied in into wider debates on the long-term development of urban societies.

US historiography developed in a slightly different manner (Culver 2014). What William Cronon once characterised as fundamentally “Turnerian in its implications” (Isenberg 2006: X) was a perspective in early US environmental history which predominantly focuses on land use and environmental change in extra-urban contexts. Donald Worster’s (1990) ‘agroecological approach’ epitomised this focus. But, as Andrew Isenberg (2006: XII) aptly points out, “the disinterest of Worster and other environmental historians in urban places was equally matched by urban historians’ long-standing disregard for the natural environment.” Somewhat ironically, metaphors from biology and ecology were adopted in urban studies, particularly by the Chicago School, which in turn was an important influence on early urban-environmental history in the US. Martin Melosi and Joel Tarr were among the first scholars who in reaction to both environmental history’s sticking with non-urban environments and urban studies’ ignorance of non-human nature defined and advocated “The Place of the City in Environmental History” (Melosi 1993). Strongly influenced by William Cronon’s (1991) “Nature’s Metropolis”, a next generation of US scholars took the interconnectedness of urban and non-urban

spaces more seriously. They highlighted the relevance of these interconnections for urban *and* environmental history and advocated an approach “no longer concerned with proving the relevance of urban places to environmental history, no longer beholden to the organism or central places models of urban studies, no longer afraid that environmental history will be subsumed by other fields through greater attention to social, labor, or cultural history” (Isenberg 2006: XIV).

The integration of urban and environmental history at the beginning of the 1990s went hand in hand with an internationalisation of the scholarly debate. A group of pioneering historians around Christoph Bernhardt, Bill Luckin, Geneviève Massard-Guilbaud, Simone Neri Seneri and Dieter Schott developed the field of urban-environmental history through a series of conferences and publications. The 1998 European Association for Urban History (EAUH) conference in Venice was the first European conference on urban history to host a session dedicated to environmental history, dealing with “Urban Environmental Problems” (Bernhardt 2001). This was followed by a session on “Cities and Catastrophes” at the EAUH conference in Berlin in 2000 (Massard-Guilbaud/Platt/Schott 2002). From this emerged a series of roundtable meetings on urban-environmental history which took place in Clermont-Ferrand 2000, focusing on pollution, in Leicester 2002, with an emphasis on resources, in Siena 2004, reiterating the making of the contemporary city, in Paris 2006, focusing on milieu, material and materiality, and in Berlin 2008, once more negotiating with a broader focus the place of the city in environmental history. The results of these roundtable meetings are documented in several publications which reflect both the programmatic debate and the case studies which have been central in developing the field (Bernhardt/Massard-Guilbaud 2002; Schott/Luckin/Massard-Guilbaud 2005).

The maturation of the field led to the publication of first syntheses, namely Dieter Schott’s (2014) overview of European urban-environmental history since the Middle Ages. At the same time, the ever widening horizon in terms of perspectives and interdisciplinarity resulted in a variety of research projects and publications. These, to name but a few examples, bridged the perspectives of urban-environmental history and the history of technology (Hård/Misa 2008), applied questions of environmental justice and (in)equalities to urban-environmental history (Massard-Guilbaud/Rodger 2011) or concentrated on specific sites relevant to the interconnectedness of cities and the environment, such as in city-river relations (Castonguay/Evenden 2012; Knoll/Lübken/Schott 2017).

The complexity of research topics dealt with in urban-environmental history suggests the necessarily interdisciplinary character of the field. Not only did scholars from the neighbouring fields of economic and social history, history of technology and urban planning contribute to the debate. Reaching beyond historians’ usual collaborations, urban-environmental history has also been strongly influenced by disciplines such as geography, social ecology and a wide range of

natural sciences. This is reflected in the prominent role of research institutions and journals which act in these interdisciplinary contexts. Interdisciplinarity has opened the community for innovations in methods and theories from various origins, but also brought with it the challenge to bridge the gap between diverse research cultures.

Currently, urban-environmental history is much inspired by the ‘material turn’ and concepts highlighting the hybridity of social, cultural and biophysical processes and arrangements. Under these auspices, historians from Darmstadt and Antwerp have recently taken the initiative to evaluate the role of urban agency for environmental change. Workshops in Darmstadt 2013 and Antwerp 2014 facilitated substantial debates on “Urbanizing Nature” and were the basis for a volume of the same title (Soens et al. 2019). The editors of this volume proclaimed a “‘Manifesto’ for the History of Urban Nature”, which gives valuable inputs for further research in urban-environmental history (Soens et al.: 19–20). Based on a relativisation of the term ‘city’ in favour of more vague, historically changing concepts of the urban, they advocate a perspective in search of networked types of agency by human and non-human actors and actants and conceive historical change as a constantly ongoing co-evolutionary process between cities, their inhabitants and nature.

In the course of these debates, urban-environmental history has adopted theories such as Actor-Network Theory, New Materialism or praxeology to account for physical or biological forces in historical research which unfold beyond human control (Haumann in this volume). In particular the concept of Socio-Natural Sites, devised by the Viennese research group around Verena Winiwarter, has been influential in the field and inspired many empirical studies (Winiwarter/Schmid in this volume). Others have broadened the perspective to include the agency of organisms and animals in order to analyse the city as an ecosystem in which human life is integrated (Brantz in this volume). However, the attempt to include non-human actors and material forces raises many theoretical and methodological questions that still need to be discussed.

Within the overarching debates about the character of the ‘Anthropocene’, which has recently become a powerful reference in the humanities, urban-environmental history has gained new relevance. The concept of the ‘Anthropocene’ again points to the fact that social and environmental dynamics are inseparably intertwined, with cities being an important form in which this interrelationship materialised. But urban-environmental history also holds great potential with regard to the future development of a sustainability-oriented urbanism in the 21st century. Leaving aside the more general question of how far human societies are able to learn from history, the interdisciplinary research into the complex field of urban-environmental history offers a broad range of arguments informing politics, economy and urban planners—which hopefully will be heard.

The Concept of this Volume

This volume is designed as a handbook which gives a concise overview of the field of urban-environmental history with an emphasis on the theoretical and methodological concepts that have been central to the debate. Each of the chapters gives a short introduction to key issues, discusses the emergence and development of the concepts, and presents the current state of the art. In addition, they reflect on the interdisciplinary connections which are essential to urban-environmental history and indicate future challenges and unresolved questions. The handbook thus takes stock of existing research and opens up avenues for further developing the field.

In this, the volume represents a specific strand of research which has developed out of the historiographic context outlined above. It does not claim to be exhaustive, but has a strong focus on those concepts which have been influential in analysing phenomena at the intersection of urban and environmental history over the last three decades. Many other approaches from the broader fields of urban history, environmental history and beyond could have been added, some of which have been addressed in this introduction. The strong focus on the concepts at the core of urban-environmental history also shows how scholars in the field have worked on a set of often interrelated and overlapping phenomena and problems. The role of infrastructures, metabolism or material forces is discussed in many chapters of this volume. However, these phenomena and problems have been interpreted from different vantage points and under different assumptions. In combination, the chapters therefore reflect the diversity of the perspectives on urban-environmental history and yet show how these perspectives relate to each other.

This volume is dedicated to Dieter Schott on the occasion of his retirement from the chair of Urban and Environmental History at Darmstadt University of Technology. Its title does not technically carry the term 'Festschrift' since the book follows a different concept. Rather than offering a mix of contributions by friends and colleagues, the collection discusses concepts of urban-environmental history which have characterised and which have been shaped by much of Dieter Schott's work. As readers will find, Dieter Schott's ideas inform many of the following chapters, which—we hope—bear strong-voiced witness to the inspiration his research and teaching have meant for opening and establishing the field of urban-environmental history.

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