

German geographical urban morphology in an international and interdisciplinary framework

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Abstract. *This paper reviews the development and main aspects of research in German geographical urban morphology in an international and interdisciplinary framework. German urban morphology has a long history. It was a progenitor of the Conzenian tradition in Britain. During recent decades, however, it has lost the prominent position it held within German human geography in the early years of the twentieth century. It has nevertheless continued to yield a sizeable amount of research, including on cultural-genetic city types at continental and sub-continental scales and on urban change and conservation. Within the framework of geographical urban morphology a number of applied and theoretical topics merit particular attention: among these are the reuse of derelict land, the revitalization of harbour areas, interdisciplinary approaches to redevelopment, holistic perspectives on the built environment, transformation and reconstruction in eastern Germany and urban shrinkage. Fundamental aspects of urban morphology as a field of knowledge include increased participation in the international community of urban morphologists, a renewed impetus to the revitalization of theory, and more contributions on ecological aspects of urban form.*

Key Words: urban morphological research, urban form, urban geography, disciplinary history, Germany

Geographical urban morphology has a long tradition in Germany, and the number and range of publications in this field in the German language must be as great as, if not greater than, in any other language. But its growth in recent decades has not been as evident as that in many other fields of German human geography and it has arguably been less prominent than urban morphology in a number of other disciplines in Germany, namely urban history, town planning and settlement archaeology (see Arntz, 1998). However, in his report on 'The study of urban form in Germany', Hofmeister (2004, p. 10) comes to the conclusion that 'although no bread and butter issue, urban form has, in recent years, received adequate attention from German geographers'.

This article is a review of both 'classic' and

recent research on geographical urban morphology. It confirms, in part, the most recent state-of-the-art assessment by Hofmeister (2004) but complements this by taking a somewhat different approach, paying attention to the recent organization of urban morphology and a number of recent research topics.

The tradition of urban morphological research in Germany

The first three decades of the twentieth century were decisive in the development of urban morphology in Germany. These started with Schlüter's (1899) and Ratzel's (1903) works and were concluded by those of Geisler (1924) and Martiny (1928). At that time German

urban geography was mainly concerned with urban morphology, particularly the location and layout of towns. This emphasis was continued by Dörries (1930) who underlined the explanatory description of the layout of towns as one of the most important objectives of urban geography. Earlier, Dörries (1925) had mapped within old towns the age of houses and styles of building, undertaking research reminiscent of that on Vienna by Hassinger (1916). From his position in the University of Göttingen, Dörries influenced several monographs on towns, in which the mapping of construction age was in each case an essential part of the work (Denecke, 1989, p. 9).

Influenced by explorations of the cultural landscape initiated by Schlüter in particular, in the 1920s the geographer Passarge (1930, p. v) pointed out, in an edited anthology on *Stadtlandschaften der Erde* (Townscapes of the Earth), that over the preceding 20 years a great deal of attention in scientific geography had been devoted to urban landscapes. The individual articles of the anthology – for example about townscapes in the Arabian Orient by Passarge and on Australian townscapes by Geisler – were predominantly about physiognomic features, though cultural, historical and economic aspects were also considered. Three-quarters of a century later Gräf and Keller's (2004) edited volume on *Stadtlandschaft* provides a basis for setting this early view of townscapes within a longer-term, cross-disciplinary perspective.

Despite developments in the decade following the First World War, Martiny (1928, p. 1) was still able to refer to research on settlement forms as having a modest role in geography, though he believed that morphological investigation of cultural objects (*Kulturgebilde*) could achieve the same importance in cultural geography as the morphology of the Earth's surface in physical geography. Subsequently urban geography diversified considerably in its contents and concepts. A new functional direction emerged, at first in Scandinavian urban geography, then initiated by Bobek in the German-speaking countries, and after that influenced by

Christaller's (1933) theory of central places. In an important state-of-the-art report Schölller (1953) acknowledged the importance of urban morphology, above all in connection with functional approaches and the genesis of cultural spaces (*Kulturraumgenese*).

The Conzenian tradition

One of the heirs of the crucial inter-war phase in the development of German urban morphology was the ethnic German urban morphologist M.R.G. Conzen. As an outpost of German urban morphology within Britain, he founded a school of thought in that country that was essentially German. Before his escape to England from the Nazi regime in 1933 Conzen studied in Berlin and had been influenced by the German geographers Schlüter, Geisler and Louis (Simms, 2004, p. 56). As a university professor in Newcastle upon Tyne, Conzen developed an innovative method of town-plan analysis that drew heavily on German antecedents (Conzen, 1960; Simms, 2004; Whitehand, 1981, 2001; Whitehand and Larkham, 1992). Conzen constructed a conceptual framework for urban morphology, which has been summarized by Simms (2004, p. 56). He distinguished the town plan, urban land-use pattern and the building fabric. He divided the town plan into three elements: streets, plots and buildings. Conzen developed a number of concepts that became important for urban morphology. One was the *burgage cycle*, which entailed a gradual build-up of a house plot until a new economic upswing led to demolition and a totally new development. Another was the concept of the *fringe belt* (*Stadttrandzone*) which the German geographer Louis had recognized in Berlin in 1936. Both concepts relate to historico-geographical variations in the building intensity of the city, which are associated with economic and social changes.

Most of Conzen's work was undertaken in Newcastle upon Tyne, but after his formal retirement from his Chair the vanguard of the school of essentially German thought that he developed in England moved to the University

of Birmingham, where J.W.R. Whitehand founded the Urban Morphology Research Group (UMRG) in 1974. Increasing in size to 28 members by 2005, this group developed two subdivisions. One deals with the planning and development of the medieval and early modern city, especially its town-plan analysis (for example, Baker and Slater, 1992; Lilley, 1999, 2000; Slater, 1987). The other is concerned with investigating the processes and agents responsible for the urban landscapes of the twentieth and twenty-first centuries (for example, Larkham, 1996; Whitehand, 1992, 2003). In 1994 the UMRG played a major part in the foundation of the International Seminar on Urban Form (ISUF), which brought together the German (or by this time Anglo-German), Italian and French schools of urban morphology, embracing archaeologists, architects, geographers, historians and planners. On its tenth birthday in 2004, ISUF paid tribute to Conzen, holding in Newcastle upon Tyne a Post-Congress Symposium of the International Geographical Union on the fortieth anniversary of a meeting Conzen had organized for that body in the same city.

German urban morphology in the early post-war decades

Meanwhile in Germany the history of urban morphology had taken a different course. After the Second World War urban morphology did not grow to the same extent as a number of other fields within urban geography, notably social, quantitative-theoretical and applied aspects. Schöller (1974, p. 33) admonished that future urban geographical research 'should not be restricted to functional-spatial analyses, quantitative methods and links to systems analysis planning'. He urged strongly that the investigation of the townscape (*Stadtbild*), be further developed, noting its fall from fashion despite its formative role in urban geography as a field of knowledge. Schöller stressed the need for links with architectural history and the history of building (*Architektur- und Baugeschichte*) and town-development

planning (*Städtebau*), as well as the fundamental importance of a geography of town planning and development (*Geographie des Städtebaus*). However, unlike in Great Britain, no major geographical research group, or school of thought, developed within post-war German urban morphology.

Townscape research and the new cultural geography

Distinct from the development of the UMRG and ISUF, which German-Irish researcher Simms (2004) regards as part of classical cultural geography, there developed in the late 1980s within anglophone historical geography an emphasis on landscape as an expression of experience. This focus, described by Simms (2004) as 'townscapes (*Stadtlandschaften*) as symbolic landscapes', developed out of the so-called new cultural geography (Simms, 2004, pp. 58ff). This contrasts with the positivist view of landscape as represented within German cultural geography (see, for example, Blotvogel, 2003; Gebhardt *et al.*, 2003).

Urban morphology in textbooks, handbooks, anthologies and journals

The importance of urban morphology can be adduced from the range of publications devoted to it. Apart from the international journal *Urban Morphology*, there are textbooks and collections of essays from Great Britain (for example Carter, 1972; Conzen, 2004; Slater, 1990; Whitehand, 1981; Whitehand and Larkham, 1992), France (for example, the textbook by Allain, 2005), Spain (for example, the volumes by Capel, 2002, 2005), and Austria (Lichtenberger, 2002). The book by Raith (2000), from a planning perspective (reviewed by Heineberg, 2003) is indicative of the significance that urban morphology has today in university education in urban design (*Städtebau*), particularly in Austria.

A current textbook devoted exclusively to German urban geographical morphology is

lacking, in spite of the long tradition of this discipline in central Europe. However, urban morphology is covered in urban geography textbooks (Bähr and Jürgens, 2005; Fassmann, 2004; Gaebe, 2004; Heineberg, 2006a; Hofmeister, 1999). Schroeder-Lanz (1982, 1986) edited a two-volume anthology on research into urban forms (*Stadtgestaltforschung*) that considers in international and interdisciplinary terms townscape and remote sensing, townscape genesis, perception of urban environment, urban forms and town planning, and urban form and tourism research. Scientific exchange and joint meetings of British and German representatives of urban historical geography were the basis for an anthology, which included contributions on urban morphology (Denecke and Shaw, 1988). Urban morphological and urban historical topics have also received special consideration in the new German national atlas (*Nationalatlas Bundesrepublik Deutschland*, Vol. 5: *Dörfer und Städte/Villages and cities*, 2002) edited by the Institut für Länderkunde, Leipzig.

Characteristic of German urban morphological research is its presence within several disciplines in addition to geography, particularly urban history, including the work of the Institute for Comparative City History (Institut für vergleichende Städtegeschichte), located in Münster (see, for example, the German city atlas (*Deutscher Städtatlas*), the series *Städteforschung* and the anthology edited by Stoob (1985)). Urban morphological topics receive frequent consideration in the meetings of the Institute that have regularly occurred since 1974 and in the series *Siedlungsforschung* (Settlement research) of the international interdisciplinary study group for genetic settlement research (Arbeitskreis für genetische Siedlungsforschung, since 2005 entitled Arbeitskreis für historische Kulturlandschaftsforschung in Mitteleuropa, Study group for historical cultural landscape research in central Europe). Important for urban morphology in the German-speaking countries is also the Arbeitsgemeinschaft Die alte Stadt (Study association for the old town), which since 1974 has produced the interdisciplinary

journal *Die alte Stadt* (see Hofmeister, 2004, p. 9).

Topics in cultural-geographical urban morphology in the post-war period

After the Second World War German urban morphological research was characterized by a reaffirmation of earlier morphogenetic approaches. However, in addition many new topics were worked on, frequently within an interdisciplinary context. Questions about the townscape were integrated within the wider field of cultural geography and linked increasingly to functional, socio-geographical and other aspects of urban geography and social geography (see, for example, Demmler-Mosetter's (1978) study of Maximilian Street in Augsburg and individual contributions to the anthology of Mayr *et al.* (1993)). A number of important contributions were made in the conference proceedings edited by Schroeder-Lanz (1982, 1986), in the historico-geographical urban research of Denecke (1984, 1988, 1989, 2002) and in the applied research of Thieme (1995).

'Classic' approaches to the analysis of layout and built structures (*Grundriss- und Aufrissanalysen*)

One of the first cultural geographers to pursue earlier research traditions after the Second World War was Gorki (1954). His layout analysis (*Grundrissanalyse*) of Westfalian towns led to the recognition of two dominant types ('round-radial' and 'right-angled-straight'). He also sought to explain certain distribution patterns genetically. Hartmann (1963) in his dissertation (Faculty of Architecture, Technical University of Darmstadt), reconstructed the urban development (*städtebauliche Entwicklung*) of the city of Mainz from Roman times, basing his interpretation on numerous historical city maps. Also important were the works of the historian Keyser (1958) on the layout of towns as a historical source with particular reference to city foundations and town planning in north-west Germany in

the Middle Ages, and the investigations by the East German historian Blaschke (1997) on the outlines and development of towns. These studies are indicative of the fact that, in addition to geography, a number of disciplines participating in urban research have utilized layout analyses to shed light on the development of urban form. In addition many volumes published on city or town planning history (*Städtebaugeschichte*) give special consideration to historical types of town layout. With regard to these aspects, the books of Planitz (1954), Egli (1959-1967), Hotzan (2004), Gruber (1976) and, from the viewpoint of the history of art, Meckseper (1982) are of importance. Furthermore, since the 1970s, partly with the collaboration of geographers, numerous historical city atlases have been produced, not only for Germany (*Deutscher Städteatlas/German Towns' Atlas; Deutscher Historischer Städteatlas/German Historic Towns' Atlas*) but also for individual German regions and many other European countries (see Guardia *et al.*, 1994; Opll, 2005; Pinol, 1996).

Since the 1970s the methods employed by geographers to interpret urban layouts have received special consideration in publications designed for a wider readership, for instance in topographical atlases for individual federal states, including the Topographical Atlas of Berlin (Senatsverwaltung für Bau- und Wohnungswesen, 1995). Other publications with interpretations of topographical maps include studies of Kiel (edited by Bähr (1983), with contributions by Stewig (on the city of Kiel) and Wiebe (on the city centre of Kiel)), urban morphological interpretations of the 1:25 000 topographical map by means of four time cuts, using the example of the city of Münster (Heineberg and Mayr, 1991), and a study of Essen/Ruhr (Vorstand der Geographischen Gesellschaft Essen *et al.*, 1900).

Possibilities for the treatment of urban morphological topics in school education, especially types of town layouts in different town planning epochs, were demonstrated by Kross (1975); this geography-didactic contribution was published at a time when the city was beginning to be dealt with in the new

geographical curriculum largely under functional and social-geographical headings (Kross, 1975, p.40). Urban morphology in current school geography education is included in the collection of articles on 'Städte' published in the magazine *Geographie heute* in 1998, and is covered by several contributions to a volume by Meyer and Popp (2005) on urban geography for schools.

The layout of towns and their building fabric have been examined with increasing frequency, particularly in combination with functional and socio-spatial aspects. Examples are monographs on the former court-towns (*Residenzstädte*) of Mannheim (Friedmann, 1968) and Wolfenbüttel (Ohnesorge, 1974). In a study of the planning and layout of the enlargement of the city of Koblenz in the eighteenth century (*Koblenzer Neustadt*), von der Dollen (1979) included both planning and the building fabric. Denecke (1979) provides another historically relevant publication for Göttingen, a city which is still strongly shaped by medieval structures. This work considers in detail the effects of recent town planning (*Bebauungsplanung*). Demmler-Mosetter (1985) elaborated urban morphological elements, growth phases and structural and socio-spatial subdivisions of the old town of Augsburg. At the scale of the individual plot, town-layout aspects were combined with socio-topological issues by Siekmann (1989). Denecke (2005) published an overview of interdisciplinary socio-topographical urban history research.

An interest of long standing that continues unabated is the study of building types. One example is the work of Möller (1959) which is concerned with types of building fabric (so-called *Gebäudeverbände* or 'building associations') in a Hamburg residential area. On the basis of physiognomic topographic mapping and evaluation of building records (*Bauakten*), Jaschke (1973) used the example of Reinbeck in the area surrounding Hamburg to investigate for three dates (1914, 1939 and 1970) the connections between types of buildings and the social positions of the clients (*Bauherrn*). Because of its refined distinctions between different style periods and house

types according to structural criteria the investigation of house types in London by Höfle (1977) is of especial interest. The author refers in particular to the pioneering article by Hassinger (1910) about house forms, the innovative art-geographical atlas of Vienna worked on by Hassinger (1916), and the comprehensive work of Bobek and Lichtenberger (1966) on the building fabric of Vienna. Also taken into account is the work of the art historian and architect Stein (1970) on the structural arrangement and conception of the façades of historical burgher houses (*Bürgerhäuser*) in Bremen and that of the architect Schuster (1961) on the layout and building fabric of *Bürgerhäuser* in the Inn-Salzach area. Further examples of the recording and classification of residential building types are the investigations by Meynen (1977, 1978) of Cologne-Ehrenfeld and by Wehling *et al.* (1990) of workers' and co-operative settlements (*Werks- und Genossenschaftssiedlungen*) in the Ruhr District.

To urban geographical analyses of the third dimension in the townscape belongs the article by Freund (1999) on high-rise buildings, taking the example of Frankfurt am Main. He elaborates not only *Gestalt* principles and locational types of high-rise buildings, but considers also, by examination of the historical derivation of high-rise buildings, the diverging political-economic influences in the former divided Germany. Of urban geographical interest is also the discussion by Rodenstein (2002, 2003) of the high-rise building development in Europe, giving special consideration to Frankfurt am Main, London, Munich and Vienna, from a sociological and urban-political perspective.

Vertical urban structures also receive special attention in a number of aerial photographic atlases (for example, Buchholz and Scharmann (1992) on Mecklenburg, Western Pomerania) as well as in city atlases that were produced with the prominent participation of geographers (Frater *et al.*, 2004 about Düsseldorf; Heinritz *et al.*, 2003 about Munich; Jansen *et al.*, 2003 about Cologne; Schmidt *et al.*, 2005 about Leipzig; and Wiktorin *et al.*, 2001).

Urban fringe phenomena

Von der Dollen (1983) examined urban growth phenomena in medium-sized towns in central Europe in relation to the fringe-belt concept developed earlier by Louis and Conzen (see also Barke, 1990; Whitehand, 1988). The approaches of Louis and Conzen, in particular the role of the internal fringe belt emphasized by Conzen, were confirmed. However, for the Middle Ages and early modern times belts were clearer than for the nineteenth century (von der Dollen, 1983, p. 15). Using the example of Greater Berlin, Hofmeister (1987) analyzed the urban-structural process of the development of villas and country house colonies between 1860 and 1920, comparing suburbanization there with the form and function of the tenement areas of the so-called *Wilhelminischer Ring* in Berlin.

Fringe belts played a significant though different role in the form of city enlargements in Germany in the course of the twentieth century. Comparative analyses of new shopping centres in the Ruhr District, including development at city peripheries in comparison with town-integrated locations, were studied by Heineberg and Mayr (1986), and large housing estates in east Germany were investigated by Hohn and Hohn (1993). The related academic debates tended to be interdisciplinary and frequently outside geography, for example within the framework of town planning or urban sociology (see, for example, Brake *et al.*, 2001; Harlander, 2001). However, geographers participated in debates about future forms at the urban fringe (see, for example, Burdack and Herfert, 1998; Wehrhahn, 2003; Wiegandt, 1998).

Regional types of towns

Schwarz (1952a,b) considered regional types of towns in Europe, notably in Lower Saxony. Classic contributions concerning the definition of regional physiognomic types of towns were the treatise of Huttenlocher (1963) and the cultural landscape-genetic investigation of south-west German types and groups of towns

by Scheuerbrandt (1972). Huttenlocher refers to the previous German urban research on this subject, particularly in the fields of construction and art history (*Bau- und Kunstgeschichte*), especially that by Grisebach (1930), whose results he felt merited evaluation by geographers (Huttenlocher, 1963, p. 174).

According to Schöller (1967, p. 41), cultural spaces bound to territories are the basic framework that shapes regional city formation. Regional characteristics are particularly evident, he believed, in cultural landscape features, especially autochthonous house forms. Like Huttenlocher, Schöller (1967, p. 41) spoke of clearly distinct 'provinces of dominant construction materials (*Materialprovinzen*)'. In the formation of regional styles, cultural influences and diffusions from the south and west of Europe were particularly important. He distinguished seven city regions and/or city groups. Franconian and south-west German cities are examples of regional types (Schöller, 1967, pp. 42-56). Popp (2005) provides a cartographic representation of the distribution of 'German city provinces', following Schöller (1967). Ehlers (1997, p. 27) notes that the regionalism of an indigenous folk culture shows particularly in building materials, specific house forms and architectural patterns.

The approach of recognizing regional city types within a historico-genetic framework was pursued by Sabelberg (1984b) in his book about regional city types in Italy. He explored building types in two regions (Tuscany and Sicily) that had different territorial, economic and social histories (see also Sabelberg, 1984a).

The importance of territorial cultural spaces in the explanation of regional urban morphological structures is evident in the German Democratic Republic. Here the former socialist town planning and the socialist land order (*Bodenordnung*), the economic system of socialism and the political system (the formerly ruling socialist party) caused changes to traditional townscapes. These reflected the power of the state and the new socialist order, particularly in larger city

centres and new towns, and accorded with the principles of Soviet town planning, first and foremost in the centre of east Berlin (Heineberg, 1982). Physical manifestations took the form of extensive demolition, structural decay and limited urban preservation measures (including partial reconstructions) in old towns and the construction of new peripheral urban building complexes (so-called socialist residential complexes) (Lessmeister, 2005; Pauli, 2005; Schöller, 1986).

Cultural-genetic city types at continental and sub-continental scales

The so-called cultural-genetic approach has gained particular importance (Bähr and Jürgens, 2005; Heineberg, 2006a; Hofmeister, 1980, 1996). This can be exemplified by studies in Latin America.

An exceptional urban geographical publication about a single cultural continent is the book by Wilhelmy (1952) about South America. He gives special consideration to the origins and standardization of Spanish and Portuguese colonial towns. Wilhelmy and Borsdorf (1984, 1985) and Bähr and Mertins (1995) give particular attention to Latin American urban morphological structures during the colonial period, as well as to more recent changes to the *Stadtbild*. By means of a case study of Montevideo, Mertins (1987) explores urban growth phases with special reference to social housing. Gans (1987) has complemented the contribution of Mertins in his research on the old town of Montevideo, studying *inter alia* urban-structural changes, building use and urban conservation. In the tradition of the urban morphological approach, the work of Gormsen is pre-eminent. He has devoted attention to problems of renewal, conservation and preservation of historical monuments of colonial town centres in Latin America (Gormsen, 1990, 1994, 1996; Gormsen and Haufe, 1992). Referring to Wilhelmy and Borsdorf (1985), Gormsen and Haufe (1992) and others, Heineberg (1994) has interpreted historical town maps from the nineteenth century and photographic materials

of the former Spanish colonial towns of Lima, Bogotá and Montevideo.

In recent decades the enormous areal growth of illegal hut quarters has been the subject of attention, particularly in the major cities (Bähr and Mertins, 2000; Kross, 1992, p. 4). In Lima, Kross produced a classification of *barriadas*, according to their foundation, age, size, location and layout. Features characteristic of the development of *barriadas* were established from maps and photographs. Bähr and Mertins (1988) provide comparative material for Greater Recife on changes to 'simple-house' settlements (*Einfachhaus-Siedlungen*).

Typical features of urban forms have also been taken into consideration in research using a cultural-genetic approach, and models of city structures and development have been produced. For example, Bähr, Borsdorf and Janoschka have developed a new model of the structure and development of the Latin American city in which not only the right-angled layout of the colonial city centre is featured but also the structural fragmentation of cities, much increased in recent times (Borsdorf *et al.*, 2002). *Barríos cerrados* (gated communities or *condominios*) are examined by Meyer and Bähr (2001) and the structure of mega-projects in the areas surrounding Latin American metropolises are considered by Borsdorf and Hidalgo (2005).

Cultural-genetic studies are by no means restricted to Latin America. There are, for example, the notable two-volume work by Wirth (2001) on the oriental city and Bähr's (2005) study of the 'informalization' (*Informalisierung*) of cities in Sub-Saharan Africa, with reference to informal settlements within fragmented cities. There are also textbooks on urban structural development in *Kulturerdteilen* by Hofmeister (1996), Bähr and Jürgens (2005) and Heineberg (2006a).

Urban change and conservation

Leister (1970) has vividly demonstrated the development of the built-up area of British industrial cities since the nineteenth century

and the effects of urban renewal attempts in the twentieth century. Other studies of the morphogenetic development of the British city in the German language include those by Conzen (1978) and Heineberg (1997). The objective of the investigation of inner-city/central areas (*Innenstädte*) in Belgium by Krings (1984) was to record by means of selected examples, including Brussels and Antwerp, the development of urban form (*Stadtgestalt*) in relation to the role in urban change and conservation of persistent elements and structures of past development phases. It is one of the important geographical urban morphological investigations.

Lafrenz (1984, 1989, 1999a,b) examined the changing attitude towards typical local building traditions in several publications, particularly in relation to the old town of Lübeck. In his examination of traditional urban form during the industrial age, he recognized two cycles. These he related to a historical theory of perception and behaviour (Lafrenz, 1999b, pp. 347-8). In two more recent studies Lafrenz (2001a,b) applied his concept of a cycle theory to Hamburg and Chicago. Comparisons can be made with Whitehand's (1988) perspective on cycles.

Destruction and reconstruction

In European history there has been a great deal of urban destruction as a consequence of wars and disastrous fires. Considerable analysis has been undertaken of the layouts and built-up structures of towns before and after such destruction. There have also been visions (*Leitbilder*) and planning measures for reconstruction. Most urban areas in Westfalia were partially or completely destroyed by fires between the seventeenth and the nineteenth centuries (Spohn, 1990; Weber, 2003, p. 175). Authoritarian administrations imposed reconstruction plans for 'drawing-board towns' with strikingly regular layouts. Sometimes major conflicts between citizens and authorities led to the retention of traditional urban structures (Weber, 2003, p. 175). Weber demonstrates the socio-spatial

consequences of town-planning conflicts in the northern part of the old town of Arnsberg in south Westfalia.

A number of research projects have been undertaken by German urban geographers on the destruction resulting from the Second World War and the subsequent reconstruction of German cities and towns. Mulzer (1972) studied the reconstruction of the devastated old town of Nuremberg, particularly with respect to the maintenance of monuments. Tiborski (1987) made a comprehensive study of the reconstruction of the old town of Solingen against the background of its development before the Second World War, including the building programme of the national-socialist period. Of importance also are the review by Bode (2002), which considers the cities of Hanover and Leipzig, the geographical investigations by Hohn (1990, 1991) on the damage to German cities in the Second World War, the publication by Hewitt *et al.* (1993) and the anthology on various aspects of war damage and reconstruction planning in Germany edited by Nipper and Nutz (1993). Publications by town planners and architectural historians, such as those by Beyme (1987) and Durth and Gutschow (1993), show that reconstruction was an interdisciplinary concern after the Second World War in both parts of Germany.

Townscape investigations as a basis for planning

Since the 1970s a number of geographical investigations for planning purposes have been published in which urban morphological aspects have come to fruition. One reason for this was the new legal basis for urban redevelopment created by the Town Planning Promotion Law (*Städtebauförderungsgesetz*) of 1971 in western Germany. Another was the stronger orientation of urban planning towards renovation within the framework of urban conservation and monument protection. Since the 1970s, and particularly the 1980s, the practical orientation of urban geography has become of increasing importance. This has

been associated with the development of the diploma in geography as a significant part of applied university education.

Among the exemplary studies in applied urban geography is the investigation into the renewal of the old town of Lübeck by Lafrenz (1977), in which the historical development of townscape elements and the conflicts of aims regarding renewal of the old town were central themes (see also Lafrenz, 1999a). The study by Berger and Debold-Kritter (1989) – an urban planner and an art historian – of the local image of Augsburg contains a comprehensive inventory for the townscape. An anthology on the renovation of the old town of Augsburg, including perception and evaluation of the townscape was produced by Schaffer and Thieme (1989). In recent decades urban redevelopment and the preservation of historical monuments have affected not only the old towns and inner-city areas of great cities but – particularly since the mid-1970s – also smaller towns (Henkel, 1993).

Prospects for urban morphology in the German-speaking world

Within the framework of geographical urban morphology a number of applied and theoretical topics merit particular attention in the future. These include aspects that on the whole relate more especially to planning – notably the reuse of derelict land, the revitalization of harbour areas, interdisciplinary approaches to redevelopment, holistic perspectives on the built environment, transformation and reconstruction in eastern Germany and urban shrinkage – but also fundamental aspects of the field of urban morphology, such as greater participation in the international community of urban morphologists, a renewed impetus to the revitalization of theory, and more contributions on ecological aspects of urban forms.

First, the so-called reactivation of derelict land is an important urban-structural topic (Wiegandt, 1997, p. 622) – in western

Germany since the 1970s and in east Germany since the political union at the beginning of the 1990s. It includes urban reconstruction in areas formerly used for trade, industry and mining, and in recent times areas formerly used for traffic and military purposes. Up to now this subject has received a good deal of attention in a number of applied disciplines. However, faced with the incorporation of old building fabric and the need for compatible new construction, the reactivation of derelict land is also of special urban morphological relevance.

Secondly, revitalization measures for unused harbour areas and their importance for urban forms has attracted interdisciplinary interest. Examples are the work of Priebs (1997) and the interdisciplinary anthology of Schubert (2001), which includes the work of geographers (Priebs on the transformation and re-integration of the waterfront in Copenhagen and Hohn on urban expansion and reconstruction on the waterfront of Tokyo). Further urban morphological studies are necessary, including on waterfront developments along rivers.

Thirdly, urban redevelopment and renewal have been the subjects of urban morphological research at least since the 1970s (see Hohn and Hohn, 2002). New aspects and needs have emerged since the 1980s, including improvements to the environments of residential areas through traffic calming and the 'greening' of environments (see, for example, Büchner, 1995). There are also the wider issues of so-called sustainable urban development (Bergmann and Wiegandt, 1996), which has received great prominence since the 1990s and, not least, post-modern types of urban development (Wood, 2003). The last of these is closely related to the process of gentrification, manifested in the structural, functional, social and symbolic enhancing of urban districts (Friedrich, 2000; Krajewski, 2006). There is an evident role for urban morphology here with connections to the new cultural geography in Germany.

Fourthly, applied research on urban forms has been undertaken by geographers often in co-operation with architects and urban

planners. An important current topic to be dealt with, particularly in inter-disciplinary co-operation, is the culture of construction (*Baukultur*) (Wiegandt, 2003). This entails on the one hand the production of entire built environments and on the other the use and perception of these environments (Wiegandt, 2003, p. 202). Also germane is the interaction of aesthetics, usability and sustainability (Wiegandt, 2003, p. 204). Up to now there have been numerous participants in the 'initiative of architecture and constructional culture' started by the German Federal Government in the year 2000, involving different project and guidance groups (for the different initiatives of the Federal Government see BBR, 2002; BMVBW, 2001, 2005). Relevant to this are more recent activities regarding the urban constructional culture at *Land* level and the current debate about 'regional building' (*regionales Bauen*) from the viewpoint of architecture and town planning (Lampugnani, 2000). With respect to applied urban morphology, of interest are the 'actors' (investors, builders, inhabitants, etc.) in individual cities, and the differences between cities (Wiegandt, 2003, p.207). Of relevance here is the discussion paper prepared by Kanzig and Wiegandt (2006) on the position of architecture within geographical thinking and research. This deals also with behavioural, post-modern, urban-atmospheric and 'action-setting' approaches to the built environment (see also Basten (2005) and Wood (2003) concerning post-modern urbanism).

Fifthly, investigations of changes to urban forms offer a new opportunity for cultural-geographical urban morphology within the framework of the transformation and urban reconstruction processes in eastern Germany, as well as in the east European so-called 'transformation' countries (see Fassmann and Matznetter, 2005). These processes have already been the subject of interdisciplinary investigations. For example, Born *et al.* (1998) examine, taking the case of the medium-sized town of Gotha, the consequences for urban development of the complex property transfers in the new federal

states. The excursion guide edited by Friedrich and Frühauf (2002) about the city of Halle and its surrounding area provides insights into urban morphological changes pertinent to a wider interested public: topics covered range from development within the medieval layout to recent processes at the urban periphery, including suburbanization and the reconstruction of former socialist residential complexes.

Sixthly, urban shrinkage is an issue in the eastern part of Germany, and increasingly in western Germany. This is an important field for applied urban morphology, particularly within an interdisciplinary framework (compare BMVBW and BBR, 2003; Heineberg, 2004, 2005; Killisch and Siedhoff, 2005).

Seventhly, it is important that urban morphologists should build even further on the long German tradition, particularly in relation to the cultural-genetic approach, of researching in foreign countries. In this respect there need to be more studies of urban form to complement functional and socio-spatial studies (see, for example, the approaches in Frantz, 2001).

Eighthly, a wider, up to now neglected, aspect is urban morphological theory. German urban morphological research has been primarily empirical and, since the 1970s, also applied. There are few strongly theoretical works. This is in contrast, for example, to the work of the British urban morphologist Whitehand (1987) who propounds a theory of the townscape and its spatial changes: a theory that connects land values, 'long waves' in the economy and the adoption of innovations.

Last, but not least, there are the ecological aspects of urban form. The geographical PhD thesis by Chilla (2004) on natural elements in the townscape demonstrates how successful theory-led investigations can be, and how the theme of 'nature and town' is of special interest for urban morphologists. There is a need to build on the older approach to historical 'green development planning' (*Grünraumplanung*) as exemplified by the

work of the geographer Meynen (1979) in Cologne.

Conclusion

Urban morphology has, within the past three-quarters of a century, moved to a less central position within German geography. Nevertheless, as this review indicates, the body of urban morphological research output has in recent decades continued to be sizeable. As in the past, the spectrum of topics covered and research methods employed is broad. In this review it has been possible to provide no more than an outline of past, present and possible future research. But the pertinence of urban morphology to a range of contemporary issues is clear and the scope for future contributions, particularly of an interdisciplinary and international character, is undoubted. The need and scope for the contribution of urban morphology to urban reconstruction within Europe alone is striking, but there is a need to build on the traditional strength of German research in other continents, where problems of phenomenal urban expansion vie with those of internal transformation. As urban morphology moves further into an era of internationality and interdisciplinarity, it is to be hoped that the indispensable geographical skills honed in classical cultural geography in general, and classical urban morphology in particular, will continue to be built upon as successfully in the present century as they were in the last.

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