Towards Understanding the Complexity of Urban Culture

A case study of Jewish communities in pre-war central Poland

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The current paper presents the experience of mapping pre-war Jewish communities in central Poland during a period of intensive social and cultural transformations. The initial analytical framework, provided thanks to the GIS database and concatenation of attributes coming from various sources, makes some initial observations and conclusions possible. It confirms the thesis that Jewish communities in pre-war Poland may be considered an example of a self-organising society, one which could be considered a prototype of contemporary postmodern cultural complexity. The current study provides the initial framework to map the morphology and spatial distribution of the complexity of everyday culture of use of space proper to this extremely diverse group.

Keywords: Urban design, urban morphology, anthropology, parametric modelling, outdoor space

INTRODUCTION

The current speed of urbanisation, and the development of design technology that enables easy and efficient shaping of urban structures based on mathematically defined parameters has created a need for a more precise definition of the basic rules underpinning the form of urban settings. The context that has served so far as the main source of knowledge about the culture of the usage of space no longer suffices in the period of rapidly progressing urbanisation and migrations of large groups of people. The need to design places that answer actual human needs is becoming progressively more urgent. Lefebvre’s call for a single discipline of urban science (2003) requires a more heuristic approach and a more efficient use of the knowledge from the various disciplines involved in urban design. The fragmentation and specialisation of science as well as historically established divisions result in huge discrepancies in the terminology and language used by researchers from various backgrounds. Some of these problems, which exist especially on the margins of social and technical fields, have already been addressed in the field of complexity science (Portugali 2006).

The current paper, structured around the case study of pre-war Jewish communities in central Poland, presents a method to elaborate the morphological typology of Jewish settlements. An attempt at typology shall enable an understanding of the processes which influenced the forms of urban settings inhabited by this group. After this introduction, a theory of complex systems is briefly explained, with em-
phasis on context as an element affecting individual choices, and thus self-organisation processes. The case study follows, featuring a concise presentation of social diversity in the studied group. The method of analysis, key from the point of view of the conference topic, explained along with a brief summary of results, has made it possible to elaborate on the future development of the method.

THE THEORIES OF COMPLEX SYSTEMS
The term complex systems refers to systems which are both open, so related to the surrounding environment, and complex, which equals the inability to describe the causal relations between parts of a system on the one hand, and the emerging nature of phenomena associated with their functioning on the other (Portugali 2006). Self-organisation, understood as the ability of a system to self-organise its internal structure (Portugali 2000, 49), is one of the basic features of complex systems. Self-organisation is explained by means of such theories as synergetics (Haken and Portugali 1995, Haken 1983), which deals with mutual relations of parts of a system and its functioning as a whole, and dissipative structures theory (Progogine and Stengers 1984), which, applied to socio-economic and particularly urban themes, focuses on fluctuations of people, values and information in cities (Portugali 2006).

While the theories of self-organisation of cities were elaborated in the second half of the twentieth century, the phenomena which they describe started even earlier. Complexity, as Portugali (2000, 315) asserts, intimately related to the 20th century post-modern urbanism, defines the phenomena which emerged along with the dissolution of high context, traditional cultures. Long established sets of norms, practices and meanings for a given community transformed and new ones emerged. The relations between physical settings and the communities living there dispersed. The order of space, which according to Alexander (1977) and Hanzl (2016, in press) means the cultural framework which structures both human behaviour and the physical settings, has been changing in tandem. Although during this process of transformation from traditional, high context societies to low context ones it loses some of its former meaning, still the architectural and urban environment enables the screening and filtering of sensory data, which is the way information is conveyed (Hall 1966, 2). A proper understanding of the concept of the meaning of urban settings (Hanzl 2013) is essential here because, as Haken (2000, after Portugali 2006) states, the key feature in how complex systems `self-organize', is that they `interpret', the information that comes from the environment. It also needs highlighting that an important part of the internal structure of human settlements results from the layout of pathways, as has been described in the widely recognised theory of Space Syntax by Hillier and Hanson (1984).

Some light may be cast on the above issues thanks to the analysis of environments where contemporary complex societies started. The structures left behind when juxtaposed with their cultural background lets us read the past activities and social relations. The forms of urban environments, approached through culture related lenses, may lead to an understanding of the processes which led to the emergence of contemporary multicultural societies. The comprehension of the way multicultural communities developed and lived together through longer spans of time may help while creating new, more open environments which cater to the actual needs of citizens, with regard to their culture related requirements.

CASE STUDY
The current paper presents the experience of mapping pre-war Jewish communities in towns and villages of Mazovian and Lodz voivodeships in central Poland, which went through a period of intensive transformations. The focus on a group who lived surrounded by other cultures, gives the opportunity to follow their spatial threads left in physical settings. The analysis is preceded by an in-depth study of the cultural habits in a diachronic approach, with Figure 1
presenting an attempt at visual classification. Jewish communities in central Poland in the period directly preceding the Second World War consisted of several groups of varied levels of acculturation, system of values, adjustment to religious beliefs and political views. The overall picture was very complex and was what we understand as a contemporary heterogeneous society.

**Social structure versus urbanisation processes**

Jews, who made up a large share of the population, on the one hand mixed with Polish and German citizens, on the other preserved their own culture. Along with the acculturation processes, which progressed with time, Jewish daily lives also changed, together with the urban settings in which they lived. People, enticed by the emerging opportunities, tried to improve their living conditions or simply began looking for any kind of income. The period of the noble economy before the partitions of Poland found many Jews still inhabiting small villages and manor houses, many still working as leaseholders, even if no longer dealing with propination. While in small villages the picture was quite clear and showed a traditional community with a few more educated representatives of intelligentsia, the growth of the population and the range of available occupations, lifestyles and political preferences, religious and social groups, resulted in a much more complex mosaic.

The larger cities, including Warsaw and Lodz, were surrounded with satellite cities and towns, while small - shtetls - villages continued their pace of life and, when it comes to the Jews living there, their traditional, religion-based culture. Many towns, starting from the period of the Kingdom of Poland, went through intensive development as newly established administrative centres. Many others developed as industrial centres, mainly, but not exclusively, for the textile industry. In many towns, new districts were developed, both by public authorities and by private owners and other, mostly private, towns were started from scratch.

The situation of development during the industrial era, overlapped with that of merchant urbanisation (terminology after Lefebvre 2003 and Portugali 2006, 312). Most of these urban centres, especially those hosting markets, accommodated large groups of Jews, their core population dealing with such crafts as tailoring, dressmaking, shoe-making, etc. Some towns had a longer or shorter tradition of Jewish settling, with various conditions for the accommodation of Jews. For instance, many towns formerly had the privilege, non tolerandis judeorum, which forced Jews to settle in the private domains of rich nobles. In other settlements, the Jewish presence was, until 1862, limited to specially established zones. Next to the commerce which developed in all urban conditions, the Jewish religious centres drew many, with the important Chasidic courts serving as major attractors. The Jewish faith and its requirements also encouraged specialised services, for instance the making of prayer shawls in Maków Mazowiecki. The acculturation processes of the inter-war period further added to this mosaic, for instance the popularity of medicine as a profession was picked up by Jewish intelligentsia, leading to the development of towns which served as health resorts offering sophisticated and specialised health services. New forms of urban structures developed, along with the culture of spending holidays in the countryside.

**THESIS**

As a result of its historic development, each single town and each single Jewish community can be characterised with its own specific set of features (Wodziński 2010, 195), which played a defined role in the urbanisation system. Each had its idiosyncrasy, which, in order to be understood, must be mapped spatially and with regard to time axis. While there is no one single approach to present all cases, still morphological typology needs to be developed to enhance understanding.

In spatial, social and cultural pluralism, the questions of human intentionality and socio-spatial emergence remain central to social theory (Portugali 2000,
The correlation between individual preferences, values and intentions, and actual behaviour and actions, is subject to Portugali’s theory of self-organisation (2000). Compared to Gidden’s structuralism, which focuses on society and groups, the point of departure for Portugali (2000) are individuals and their personal choices. The above considerations are in line with the empirical studies of the relations between Jews and Poles, especially in large cities, where more complex socio-cultural processes could occur. This is one of the possible paths for the further development of this research.

The current paper proposes a thesis that Jewish communities in pre-war Poland represented an example of a self-organising society, one which could be considered a prototype of contemporary post-modern cultural complexity. The mapping of this complexity is a challenge, a method for which is addressed in the current study.

**METHOD**

The understanding of the relations between the patterns of everyday life and the social habits of the communities needs contemporary analytical tools. The complexity of patterns has been approached with the usage of a hierarchy of typologies. Three basic levels were used as a starting point for modelling - that of region (Figure 2), that of town, and that of neighbourhood. The analysis led to the pinpointing of certain cases which although considered Jewish because of the high population share, at the same time represented different classes and varied significantly, including the way the structure could be mapped. The basic level was a single neighbourhood, with such features analysed as culture related notions of rhythms and sociometric layouts. The heuristic method of highlighting those elements of urban environments which were key for a given case have been applied. The theory, based on the anthropological concept of meaning and the quest for its reflection in spatial order as a feature attributed to physical forms of urban structures, supported the classification and understanding.

**Database**

While the making of the complete dataset needs a bottom-up approach with individual case studies, the general framework may already be defined, with an assumption however that the classification may be further extended. In order to achieve comprehensive results which could fully render the reality, the
The database needs to be scalable.

Figure 2
The main patterns of distribution of the settlements with Jewish population in 1827, 1 – percentage of Jewish population in towns and villages, dots' sizes describe size of a Jewish population, 2 – regional centre: Warsaw, 3 – remaining towns and villages with Jewish population, 4 - contemporary voivodeships borders, 5 – counties' borders in 1827.

Table 1
Features included in the current set of attributes.

The combination of values from several fields would give a matrix, determining the type of individual record. Concatenation of attributes should be done separately for various time periods.

The current study, departing from a more heuristic approach, starts by establishing a clear method of classification of lifestyles and values versus choice of living places. The requirement to render the actual complexity of the typology means avoiding any sort of predefined, closed and hierarchical structure. Instead, what we need is a scalable system of description which may accommodate both new categories - fields - and new record values, as necessary. Some historical documents have a predefined structure, which should be followed unaltered to convey its historical testimony, e.g. classification of settlements based on results of the 1921 census. While the number of such comprehensive and closed documents is limited, they may be used as initial characteristics, giving the general picture and introducing background organisation. Another basic source of knowledge is statistics, which contains mainly quantitative data. For the sake of the final assessment, typology thresholds need to be introduced, referring to the quantities of Jewish populations, their percentage and the size of towns or villages.

The initial study covering the available statistical data may not only serve as a framework for further development but also reveals an image which may be used as a source of valuable insights into the dynamics of Jewish life in central Poland. The ArcGIS 10.1 has been used as a platform for mapping, with shapefiles created describing the situation at a few historical moments based on the data available. The shapefiles were afterwards combined in order to follow the processes of the emergence or collapse of Jewish communities. While the data coming from the origins of Jewish presence in Poland is fragmentary and refers to the established kahalls only, which is still the case of 1827 statistics (Figure 2), the most recent available statistics, coming from 1921, contain exact numbers of Jewish inhabitants, down to a single person. This gives a very detailed picture of urban dynamics at this moment. Later census data of 1931 has not been published in a form enabling the analysis of population dynamics.

<table>
<thead>
<tr>
<th>Field</th>
<th>1765</th>
<th>1827</th>
<th>1921</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>name</td>
<td>name</td>
<td>name</td>
</tr>
<tr>
<td>Current name</td>
<td>name</td>
<td>name</td>
<td>name</td>
</tr>
<tr>
<td>Population</td>
<td>-</td>
<td>quantity</td>
<td>quantity</td>
</tr>
<tr>
<td>Jewish pop.</td>
<td>value: &lt;2000, &gt;2000</td>
<td>quantity</td>
<td>quantity</td>
</tr>
<tr>
<td>Share</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Fairs/year</td>
<td>-</td>
<td>quantity</td>
<td>-</td>
</tr>
<tr>
<td>Markets/week</td>
<td>-</td>
<td>quantity</td>
<td>-</td>
</tr>
<tr>
<td>Masonry buildings</td>
<td>-</td>
<td>quantity</td>
<td>quantity</td>
</tr>
<tr>
<td>Wooden buildings</td>
<td>-</td>
<td>quantity</td>
<td>quantity</td>
</tr>
<tr>
<td>Buildings</td>
<td>-</td>
<td>quantity</td>
<td>quantity</td>
</tr>
<tr>
<td>Voivodeship</td>
<td>name</td>
<td>name</td>
<td>name</td>
</tr>
<tr>
<td>Property</td>
<td>value: n, k, ch</td>
<td>value: p, r, ch</td>
<td>-</td>
</tr>
<tr>
<td>Type</td>
<td>-</td>
<td>-</td>
<td>value:</td>
</tr>
<tr>
<td>Community board/ kahall</td>
<td>all</td>
<td>all</td>
<td>yes/not</td>
</tr>
<tr>
<td>Bund</td>
<td>-</td>
<td>-</td>
<td>yes/not</td>
</tr>
<tr>
<td>Hasidic community</td>
<td>-</td>
<td>yes/not</td>
<td>yes/not</td>
</tr>
<tr>
<td>Administrative centre</td>
<td>-</td>
<td>yes/not</td>
<td>value: capital, voivodeship, curcut</td>
</tr>
<tr>
<td>Industry</td>
<td>-</td>
<td>type: t, m, ...</td>
<td>type: t, m, ...</td>
</tr>
<tr>
<td>Notes</td>
<td>text</td>
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</tbody>
</table>
The statistical data and typology of urban centres were juxtaposed with the available knowledge on new industrial and administrative towns and districts started in the region in the 19th and 20th century, including the Jewish population. Here many sources were used, including databases held by: Polin Museum in Warsaw: www.shtetl.org.pl, YIVO Institute in New York, Jewish Gen and others, as well as available research on the development of industry and urbanisation, both during the period of the Kingdom of Poland and the interwar period. Studies on individual towns and villages were also consulted, as well as numerous historical elaborations referring to the Jewish past in Poland. The full bibliography goes beyond the volume of the current paper and will be presented in a book containing the final results of the current research.

Chosen features included in the current set of attributes are listed in Table 1, along with a preliminary set of values. The final list is yet to be elaborated or, more likely, will be left open for possible extension. As a result, an initial framework typology of urban centres of various scales has been obtained, which shall allow for a more profound understanding and description of Jewish urban life in Poland in the period before World War II.

RESULTS

While the traditional society offered a livelihood in a highly defined and hierarchical structure, starting with the abolishment of the noble economy and along with the increasing industrialisation, the former stability was lost. Deprived of this economic base, with the changing conditions of local communities no longer providing sufficient support for their poor, Jewish masses were forced to look after themselves. Population growth and the shrinking market for their services in locations they had lived so far, together with the opportunities which opened up thanks to the development of industry and the growth of new administrative centres, forced crucial changes in Jewish society. This was the situation when, with the progressing development of secular education, and, as a consequence, individualism, more and more actors started planning and re-planning their individual activities, looking for new routines. For the Jewish population, accustomed to adjusting to the decisions of governing bodies, in the period of transition from a high context culture to a low context one again easily adjusted, however this time based more on individual and family decisions than that of community.

The model defined by Portugali (2000, 243) as a new order-parameter plan applies to the current case study. With the constant migrations and adaptations to the situation of the already established or newly-formed urban centres being a typical reality for Jewish citizens in pre-war Poland. Both scenarios which Portugali distinguishes apply here: Jews became enslaved in the system of norms which ruled in the place before their arrival, and they affected the new reality, adjusting it to their needs and system of rules and values appropriate to their own culture. We may also establish a time-scale, as some larger and shorter processes coexisted in the system. Cities, for instance, which had served as primary or secondary administrative centres for years, were permanent magnets for Jewish communities, who had lived there since the Middle Ages. These processes provided the background for the much speedier development of industrial towns, some booming then declining very rapidly, others observing a more stable development, or, like Lodz, growing into a metropolis. Against the backdrop of economic activities, individual decisions were made, following individual preferences and systems of values, as well as the outset preconditions, such as economic capacities. We may presume that there was opposition between the highly centralised hierarchical and, to a large extent, oppressive nationalist practices of planning, and "the highly distributed, diffused and decentralised urban tradition" (Portugali 2000, 247).

The idea of self-organisation is crucial as it shifts the understanding of agency. In a historical sense, it has been up to now recognised that a society, especially the Jewish society in pre-war Poland, had very
little influence on the actual appearance of cities, or at least it was hard to define. Looking at the same historical facts from the perspective of self-organisation, we start to recognise their role in the urbanisation process. As particularly mobile citizens, they significantly altered the dynamics of urban growth. Performing various professional activities, they undeniably influenced local economies. They also influenced the form of dwellings and tenements, which, originally universal and adaptable, had to now accommodate Jewish families, with their specific habits. Among the neighbourhoods they picked to live in, there were linear structures, more concentrated ones, and even those which adopted much more contemporary models of dispersed urbanisation. In certain settlements, differing models developed one next to another, representing different cultures of the usage of space.

The regional level
The demographic dynamics are comparatively high for the Jewish population, yet quantitative thresholds need to be defined in order to assess their representation in the settlement network of central Poland and provide an image at a given moment. In 1921, of the total number of 345 settlements in central Poland with a Jewish population larger than 50, 70 had a Jewish population of 50 percent or more. Among the multiplicity of towns and villages in central Poland, some of them very small, others reaching up to several hundred thousand, Jews were usually present in great numbers in the more urbanised ones - in 1921, in the 70 mentioned above, 25 possessed the status of a town, 27 were urban settlements and 10 still villages, most quickly urbanising to become towns in future or suburban colonies outside larger settlements.

The classification of a town's profile refers mostly to those settlements with a population larger than 50, usually hosting a Jewish kehilla - a religious community. In the case of smaller settlements, the profile was chiefly rural, with Jewish families catering to the basic needs of the surrounding communities in terms of commerce and tavern-keeping. In larger communities, there were also other basic crafts offered, traditionally tailoring and shoemaking. Additionally, in many manors, small groups of Jews resided, perhaps being current or past leaseholders (Figure 4).

When analysing the distribution of the Jewish population in the scale of a region (Figure 5), two main patterns are noticeable, corresponding to the two main types of prevailing economies: agrarian and industrial. The main difference between the two patterns refers to the regularity of distribution and its internal dynamics.

The scale of this phenomena varied between counties, depending on the importance of the manor economy in general, and the role of agriculture. Nonetheless, in some counties, such as Łowicz, apart from major towns, Jews were hardly present.
The town level

The variety of Jewish culture in pre-war central Poland found its reflection in the variety of neighbourhoods inhabited by Jews. Each town had its own history, its own specific reasons for development and growth. The Jewish population might change over time, first growing then declining when the gentile citizens of many towns obtained the privilege non tolerandis judeorum or pogroms purged Jews out of towns. In some towns, Jewish zones were created or collapsed and even in certain cases lost their charters because of fires. Reasons for growth were multiple, in the era of industrial production, the most common were related to the development of specific industries, with textile or leather garment production predominating. Despite this, many towns and villages continued as before, servicing the neighbouring country with minor crafts and commerce. There were also numerous religious centres, in most cases growing around the court of a Hasidic or Orthodox rabbi. Among centres of religious cults, the most spectacular examples of rapid growth were Ger (Góra Kalvaria), Przysucha and Aleksander (Aleksandrów Łódzki), all of them seats of famous Hasidic rabbis.

The presence of a specialisation did not however exclude other activities, with commerce and crafts represented in all Jewish settlements. Smaller settlements maintained their unique profile and specialisation, their development leading to complexity, and the overlapping of several characteristics. These processes, accompanied by progressing acculturation and assimilation, meant districts inhabited by Jewish groups had specific features when it comes to social status, education, professional profile, religious observation, etc. Jewish prewar society was very diverse, the individual preferences strongly affecting both the actual lifestyle and, based on this, place of living and form of settings. This is undoubtedly a feature of contemporary complex societies, with their specifics of low context culture and high context ones. This phenomenon though most explicit in the case of large metropolis, such as Warsaw and Lodz, is also observable in cities with long traditions of Jewish presence, such as Radom, Płock or Siedlce.

Rapidly developing towns and villages gained new extensions, such as colonies or suburbs. This rapid suburbanisation proceeded with Jews, gravitating to these new urban centres, taking an active part in this, often informal, development, sometimes happening just outside a town's administrative borders,
on private land, as in the case of Lodz Bałuty. In other cases, like in Koluszki, a former village which grew strong, it was due first to the construction of the Warsaw Vienna Railway and later on thanks to its connections to Lodz and further to Kalisz and Poznań and the important railway hub there. Several smaller villages in its direct proximity urbanised, leading to the growth of the town and attracting Jews. Jews who settled in the neighbouring villages, in most cases, profited from the existing community facilities, together forming a thriving community. Such a cluster may or may not become an actual town.

**The structure of a traditional Jewish neighbourhood**

In many towns, the districts inhabited by Jews became more urban than the surroundings, with urbanisation pressure and densities higher than elsewhere. Jewish citizens often flocked to historic medieval cores, which usually hosted local markets. There they preferred locations next to the river valley, which, firstly, were available and much cheaper due to the flood danger and, secondly, catered to their needs in terms of religious customs. While the plan of a town after the arrival of Jews remained relatively unaltered, especially when speaking of the network of public streets and squares, the urban blocks were replaced with new, masonry structures of a much more urban character, as in Brzeziny near Lodz. Moreover, the way space was used changed, from a more fragmented and linear one, into one integrated around typically Jewish focal points, which reflected the three main spheres of life: sacrum - represented by a synagogue, house of study, ritual bath, profanum - concentrated around work - and represented by the market place, and domicile - in the twentieth century represented by a backyard.

The transformation of the former parcellation, explicit in the plans of towns inhabited by Jews at the turn of the eighteenth century, followed a different social organisation. The community kehilla, initially very strong, practically independent from the town’s regulations, functioned separately from the surrounding town, even if well integrated into its structure, while still catering to the needs of the town’s citizens and visitors. This position had its reflection in the urban structure, with interior space within traditional Jewish quarters seemingly unordered and uninviting to visitors, while for Jews serving as extensions of their dwellings and a space of interior circulation. The last observation confirmed by the tradition of eruvim - temporary cords distinguishing private space during Sabbath. With time this former hierarchical structure released, giving way to multiplicity of lifestyles, which were also reflected in the actual form of neighbourhoods. The features which are listed in the current paper are explained in more depth in other articles stemming from the current study (Hanzl 2013, 2014, in press).

**CONCLUSIONS AND FUTURE RESEARCH PATHS**

This paper provides a summary of the larger research on the most typical neighbourhoods inhabited by Jews in central Poland in the pre-war period. The initial analytical framework, provided thanks to the GIS database and concatenation of attributes coming from various sources, makes some initial observations and conclusions possible. Firstly, it confirms the thesis that Jewish communities in pre-war Poland may be considered an example of a self-organising society, one which could be considered a prototype of contemporary postmodern cultural complexity. While the complexity of everyday culture of use of space is challenging, the current study provides the initial framework to map its morphology and spatial distribution. The data collected reveals the following features which differed between settlements and neighbourhoods:

- acculturation level and attitude towards religion,
- main professional profile of a settlement or of a neighbourhood,
- size of a community.
Additionally, characteristics changed over time, with new layers resulting from industrialisation and the development of modern administration, overlapping with the former urban centres coming from the period of merchant urbanisation (Lefebvre 2003 and Portugali 2000, 312). The model of a new order-parameter plan (Portugali 2000, 243) entirely applies, Jewish citizens in pre-war Poland used to migrate and adjust to external conditions, either enslaved in the system of norms which ruled in the place before their arrival, or adapting it to their own needs. An attempt at the classification of larger urban centres is given, distinguishing such types as industrial, administrative, commercial and religious ones. In the settlement network of smaller Jewish concentrations, two patterns have been noticed: a dynamic and a static one, linked to industrial and rural economies. The detailed analyses of census data in the scale of the urban region made it possible to follow the urban growth processes.

Further research aims at more in-depth illustration of the above characteristics, with the analyses of individual case studies. The data base framework may be further completed and extended in a bottom-up way, thanks to its open structure. Another challenge may be the examination of the spatial, social and cultural pluralism through the questions of human intentionality and socio-spatial emergence with relation to the meaning conveyed by the form of the urban settings.

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REFERENCES

Hanzl, M 2014, 'Culture as a Determinant of City Form - the case of the former Jewish district in Lodz', in Bovati, M, Caja, M, Floridi, G and Landsberger, M (eds) 2014, Cities in Transformation Research \& Design: Ideas, Methods, Techniques, Tools, Case Studies, Politecnico di Milano/eAAe/ARCC, Milano, pp. 625-634
Hanzl, M in press 'Towards Understanding of Spatial Order as a Cultural Issue', Proceedings of ASK. The Conference, Warsaw
Lefebvre, H 2003, The Urban Revolution, University of Minnesota Press, Minneapolis, London
Portugali, J 2000, Self-Organization and the City, Springer-Verlag, Berlin Heidelberg