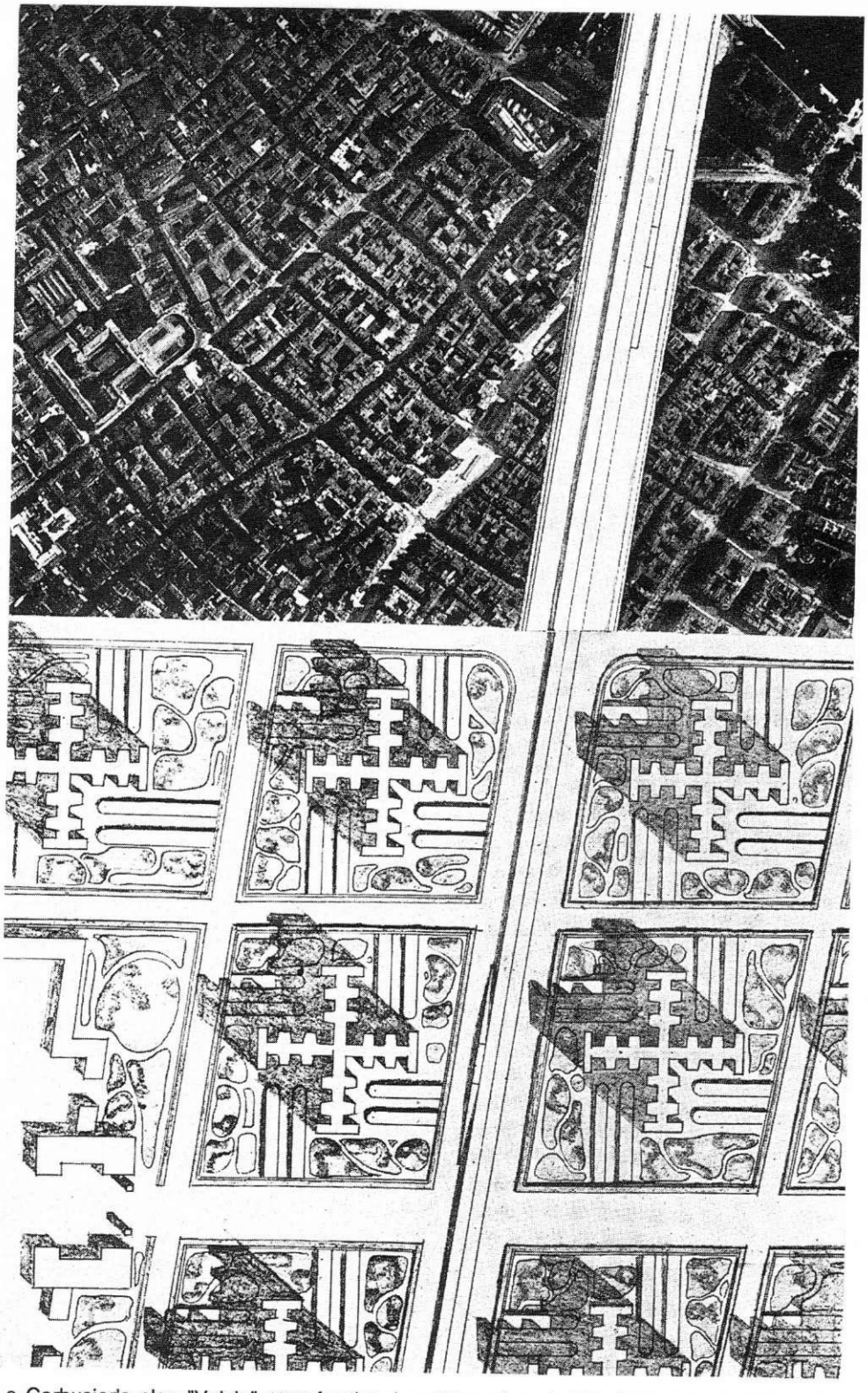

Le Corbusier's plan "Voisin" 1925 for the demolition of central Paris and the building of a modernist sky-scraper and highway city. (Le Corbusier: *The City of Tomorrow*, 1929.)

Life and Complexity in Urban Space

by Bo Grönlund

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Modernist urban planning and architecture wanted to get rid of the urban street in favour of cars and a floating open space. Since around 1980, Scandinavia as well as other western countries have seen a renewed interest in planning and design of urban streets. Urban streets are probably a key element of a humane city with encounters among strangers in public space and with differences, as well as the possibility of unforeseen events taking place. The understanding of humane aspects of street life has been hampered by fear of urban complexity. The article discusses the question of urban streets and urban complexity with an offset in theories of space, information, communication and elementary social life.

In 1933 THE URBAN STREET was programmatically killed by decision at an international conference of modern architects held at the place of birth of Western civilisation, Athens. For the director of the event, the most mythical of all 20th century architects, Le Corbusier, the historical whir of winds of this setting clearly underlined the dawn of an era of a new kind of cities, to which he meant he had the recipe. From this moment on the concept of urban streets should not be used any more, only the concepts of traffic channels, roads and paths. (Le Corbusier, 1973.)

Was this the release of a real death sentence, or was it only symbolic, ritual murder? Probably both. *The Athens' Charter of CIAM* had an influence on architects and planners, and therefore on the urban development to come, but much street-killing had already been done with the help of many different kinds of people. For more than a century the urban street had been seen as a major root of social evil. Industrial development, the growth of corporations and modern war-fare had blown up the traditional urban tissue. Many of the more well-to-do had escaped to the suburbs. New transportation technologies forced new kinds of transportation networks as well. The Ford car-assembly-line, introduced in 1913, was a major factor as it made car-transport possible for large groups of people. Although at this time it was only a mass-phenomenon in America, Le Corbusier was not the only one dreaming of cars in Europe.

The very same year of the Charter of Athens, Hitler came to power. How different their ideas were in other ways, both Le Corbusier and Hit-

»Confronted with mechanised speeds, the street network seems irrational, lacking in precision, in adaptability, in diversity, and in conformity... The width of streets is inadequate... The distances between street intersections are too short... The city block, a direct by-product of the street system... this system of building... has long ceased to correspond to any need... Traffic channels must be classified according to type and constructed in terms of the vehicles and speeds they are intended to accommodate... The pedestrian must be able to follow other paths than the automobile network. This would constitute a fundamental reform in the pattern of city traffic. None would be more judicious, and none would open a fresher and more fertile era in urbanism«

The Athens Charter of CIAM, 1933.

»Different kinds of traffic ought to be concentrated on adjacent parallel tracks in such a way that motorists, bicyclists and pedestrians will use traffic routes together and in such a way that they can have visual contact with each other... Dwellings, utilities and places of work in urban areas ought to be accessible along streets, roads and paths closely surrounded by buildings in use. There must be at least one connection of this kind from bus stops or other stops for public transport to the dwelling, utility or place of work. Windowless basements ought to be avoided.«

Bo Grönlund et al: *Technical prevention of violence and vandalism*, DS-recommendation DS/R 470, 1991.

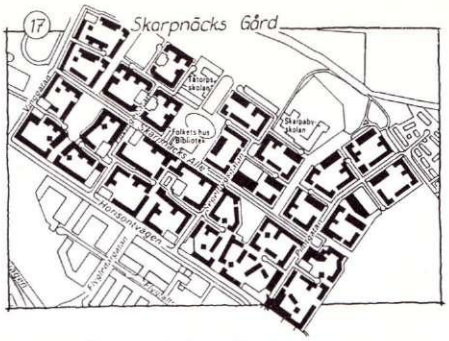
ler meant they had the right of the genius to decide for others. Both of them also saw the car as an important key to the society of the future. In these two ways both of them had modernist developer ideas. Although Hitler disapproved of the style of modernist architecture and modernist urban planning, he made an important contribution to the new modernist city through the inherent logic of automobilism (possibly without knowing it), as he focused on an extensive net of motorway-construction and as he initiated the production of a car for the German people: the Volkswagen.

Hitler also made another, but indirect contribution to the modern city and the killing of the street. He had shown that modern man could still fall victim to mass-psychology, when gathered in crowds. To reduce the future probability of this, the sociologist Mumford and other democrats argued for a city-building after World War II that did not gather anonymous crowds in the heart of cities, but spread them outward to a larger region of suburban neighbourhoods (Mumford 1938 and 1942). From the point of view of street-life, this was an anti-urban strategy. (The conclusion was probably also wrong, because deprivation was the foundation of the mass-appeal of fascism – not the urban spatial structure).

CIAM also had two other goals related to the future of the street: the industrialisation of the building process to solve mass housing shortage, and the clearance of large areas for the works of modern architecture. World War II indirectly promoted this (as a side effect), but it was in non-bombed America that bulldozed "slum" clearance created the first major speech of defence in favour of the traditional urban street, when Jane Jacob's (1961) wrote *The Death and Life of Great American Cities – The Failure of Town Planning*. Her book was a plea for city diversity and she saw the urban streets as the true setting for this. The joint effect of her book, political struggle about urban renewal, and an uprising of the urban poor was, some years later, a halt to publicly promoted "slum" clearance.

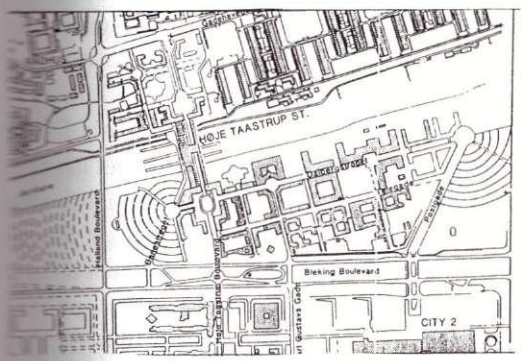
In Europe – from the end of the 1960s – there also was a critique of "slum"-clearance, but basically from points of view, that did not focus

Egebjerggård, Ballerup in Denmark.

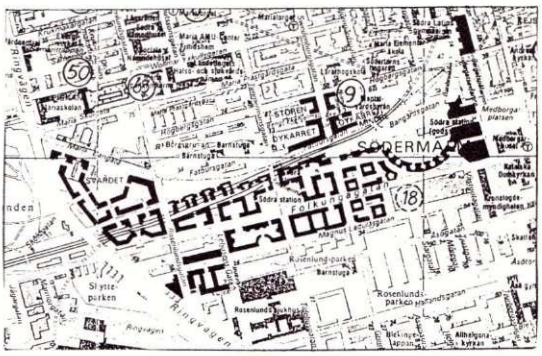


Skarpnäck in Stockholm.

1 km



Høje Tåstrup Stationscenter in Denmark.



Södra Station in Stockholm.

on street life but on housing shortage and affordable rents in inner city locations. The lack of diversity of urban space was instead found especially in the suburbs, the dormitory towns. Architectural street motifs were to some extent re-introduced already in the 1960s – often poorly understood – but the focus of interest was to reduce the size of the neighbourhood and the number of dwelling in each project, to counter the dullness and anonymity of industrialised housing areas through a kind of "small is beautiful" movement. The so called "dense, low-rise" housing was developed in the image of countryside village clusters. In this way the critique of lack of diversity in dormitory towns led to the promotion and building of dormitory pseudo villages, and not to the promotion of diverse city streets. The anti-urban tendency of modernist town-planning was taken to its extreme with these "village" projects, as we run into the "energy-crises" of 1973, and people had to leave the car in the garage.

What happened to the city streets until 1973 seems – at the 20 year distance of today – reasonably easy to understand, although the story above is fragmentary and merely indicated.

The development since is not possible to see as clearly yet, but that something happened to urban planning and design around 1980 is obvious. The growth of Northwest European metropolises had come almost to a halt. Gentrification processes were going on in some older inner city districts. The aesthetics of modernist architecture and modernist space was heavily criticised, and new kinds of projects – seemingly built on ideas of pre-modern urban streets – saw the light of day. In Scandinavia the major examples are the new urban districts of Høje Tåstrup and Egebjerggård in Copenhagen, and Skarpnäck and Södra Station in Stockholm. Outside Scandinavia, examples as the Berlin IBA exhibition projects are more well known – projects in which, among others, Rob Krier and Aldo Rossi took part. (IBA 1984, 1987.) It is note-

A street in Høje Tåstrup between Telecom and Postgiro/Girobank. Note the absence of doors and the absence of interesting windows at street level. Photo: Bo Grönlund, 1993.

worthy that Krier's and Rossi's basic books on architectural qualities of pre-modern urban patterns were published in their English translations in 1979 and 1982 respectively.

While in Europe the re-introduction of the idea of city-streets was carried out as part of a public enterprise, in the US the re-introduction had mainly a commercial background, most clearly expressed in some of the Festival Markets, and earlier in parts of Disneyland. On both sides of the Atlantic the interest in the traditional city street was simultaneously promoted by efforts of building heritage preservation, which, beside all its merits, also have a tendency to turn old city parts into the rigor mortis of outdoor museum areas.

The renewed interest in the traditional city street did not last long, with the exception of streets in the old urban commercial cores, where pedestrianisation and growth of street life take place. At the end of the IBA Exhibition period – in 1987 – it was clearly not the new city streets that interested the avant-garde architects any more. This street interest became even more short-lived than the post-modernist interest in the aesthetic language of classical architecture.

In the last couple of years avant-garde architecture has gone trough a period of "de-construction", experimenting with contradictory and sometimes aggressive new combinations, where the major purpose seems to be experiments of pure form, and the self-expression o the architect, though not without the creation o a bit of mystery and astonishment. While thi might contribute to the diversity and complexit of cities, if related to the question of city street and human life in urban space – that is to th context of the city – this has not been the case The results, that are most often seen in the aca demies and schools of architecture, are often a the same time confused and full of aesthet hubris – a large number of visually artistic bu abstract drawing-board projects, disconnecte from local context and empty of life. At this poin the architecture of avant-gardists like Tschumi Libeskind and Eisenman, and smaller mind fol lowers, would be dangerous, was it not for th deep crises of the financial sector and the con struction industry, that saves us from large scal experimenting with cities and the lives of people

As there is a lot more of interest that need t be discussed in the former "wave" let us get back to the new urban street-scapes of the 1980s i projects like Høje Tåstrup and Skarpnäck. Why were the ideas of these projects so short-lived Was it just because of the economic and the pro fessional necessity of architects to invent and re invent architectural fashion at an increasing frequency rate? Or was it because these project failed in some way?

If the intentions of these projects were no mainly formal – which we don't think – bu contained real intentions to create possibilitie for lively urban streets, then they do not seem t have succeeded very well. There is not much street life to see. The amount of people even i rush-hours at the most central intersection is less than half of what is necessary to get a feeling o being in a central place. At the same time the urban design does not contain enough possibili ties of diversity that really matters, although architectural variation to some extent has been promoted. In Høje Tåstrup large enterprises and institutions like Telecom and Postgiro – each filling several blocks – heavily contribute to the actual killing of streets. The number of dwel lings at the same time is too small here, and a

number of units of private services, which should have contributed to the life of the new city area, went broke – or the shop floor-space never got let – because of too small a customer base, too high rents and too high general taxation levels, hampering private services. Architectural scenography based on the concept of city streets don't work, when the basic social circumstances contradict the architectural setting; e. g., it is impossible to create a rich and adventurous street experience with 50 or 100 meters between the entrances to the buildings.

While Høje Tåstrup has advantages of a rather central location from a transportation point of view, the problem of Skarpnäck is enforced by its greater isolation from the surrounding city districts. Like Høje Tåstrup, Skarpnäck also has to accept a rather high degree of separation of areas of work from areas of dwelling within its own district, although the goal in both places has been a better integration, than is usually seen. The result is still basically a dormitory town, though there are also some features of city architecture.

This is not a critique of the intentions of these projects, which in many ways are honourable, and it is not a rejection of the necessity of experiments. We should see it as a statement on the real difficulties of bringing streets to life in societies like ours outside a square kilometre or so of old downtown areas, and maybe some small pieces of streets and squares here and there in the rest of the city. (We know that not all streets were full of life in pre-modern cities either, but there was generally more street life, than in the new street projects , partly as a result of population densities 10–50 times higher than in contemporary suburbs, partly because of another kind of everyday life).

We still lack a thorough analysis of the street oriented projects of the 1980s and the life in them, but so far it seems reasonable to assume that they run into several obstacles, with roots in the deep structure of modern society itself. In practice it is difficult for architecture and urban planning to counter low population density, to counter large corporations, developers and public institutions breaking the scale of the city street, to counter the high rents in new buildings, to counter the rationalisation and corporatisation of retail trade, to counter the number of cars, to counter the extension of services within the homes – including global communication networks – and to counter the relative poverty of people caught in the "do-it-yourself" economy-trap of extremist well-fare-state taxation, which kills commercial private services or push them into "moon-lighting".

It certainly looks as urban street-life is almost impossible today outside the old cores, even with the best intentions to promote it other places in the city. The street life is threatened in the old cores too, as these become increasingly dominated by the same national and international chain-stores and discount shops that are found almost everywhere, and as the old cores increasingly get managed like suburban shopping malls. Why shall anyone go there, if it makes no difference?

As this text is written, the Danish newspaper *Politiken*, February 14, 1993, writes that the number of cafes in France has been reduced from 200 000 in 1960 to 70 000 in 1990, and continues to fall. American fast-food, TV and a new relative poverty get the blame. The article also notes, that many today prefer the home, which – although not explicitly mentioned here – got an increased spaciousness in this period.

Sneakingly, the impression builds up that modern society not only dissolves the division between town and country, but destroys the possibilities of social life in urban space as well. As street life is killed, society gets increasingly segregated spatially as well as socially, and the trajectories of people with a different background more rarely intersect each other. The result is a loss of real experiences of difference (a growing poverty of real experience), as well as a loss of solidarity. Fear of crime will at the same time grow, and the possibility to counter this fear diminish, creating a vicious circle further reducing ordinary street-life.

On the abstractness and inwardness of modern urban space

If we go to other professions than architects and planners to search for a deeper understanding of the lack of street life in most parts of contemporary cities, there is generally not much interest in the question. In North America, if asked, many would blame it on poverty, drugs and crime, the homeless and the gangs: in short the undesirables. In North Western Europe the weather would get part of the blame, although this is only partly true, as is shown by the growth of downtown street-life here in the last decades (Gehl, 1987). Many would also blame it on the car. Others would blame TV, the average American watching more than 30 hours a week, the Europeans not quite reaching this level yet, but catching up.

Only a few would see the lack of street-life as a symptom of deep structures of modern society. Two intellectuals that have done it – since the end of the 1960s – are the French philosopher Henri Lefèbvre (1968, 1974) and the New York sociologist Richard Sennet (1990). Both struggle to get street life back not only in sheer defiance of deep social obstacles, but to get rid of the roots of these obstacles themselves. Together they show, that to get life back on the streets we have to deal with forces as strong as Capital, God and Enlightenment. Lefèbvre and Sennet – put together here, as far as we know, for the first time in one diagram (Diagram 1) – see the problems of modern urban space on two different polar axes. Lefèbvre focuses most heavily on the contradiction of abstract space versus differential space, Sennet most heavily on the contradiction of spatial inwardness versus spatial outwardness. These spatial contradictions – if crossed – can define different aspects of the our city of interest, and state our problem of street-life in general terms.

According to Lefèbvre we live in a capitalist society, that has a general tendency to turn the formerly absolute space of nature and early human culture into abstract space. Capitalist space is produced as commodity and as distribution networks. Therefore, seen from an exchange point of view, it should be as "general" as possible. The right-angle repetitious geometrical grids of the North American city can partly be seen as an example of this tendency. Industrialised mass housing and mass office building are other obvious examples. But over and over again, economic competition and political struggle create a contradictory space, adding new differences to the original differences of space given by nature and history that so far have not been completely "neutralised". In this way, according to Lefèbvre, spaces of difference are produced to some extent, although the general tendency is the production of abstract space. Since the 1960s differential space is also to some extent produced as a result of the growing importance of leisure and non-labour – a tendency of growing importance that may lead to a paradigmatic change in the concept of space.

According to Sennet, we also live in a capitalist society, but as he does not believe in Lefèbvre's political ideas of great political revolutions, Sennet has to focus differently in his spatial analyses. If the capitalist economic "mechanisms" cannot be basically changed within a reasonable time, or without too large human costs, then the struggle for a better city has to be primarily cultural – not primarily political-economical. This interpretation of the differences of Lefèbvre's and Sennet's basic points of view has to be included in the understanding, why Sennet has to fight God and Enlightenment instead of Capitalism as such. That the struggle for a better city is in vain without a cultural perspective, is also Lefèbvre's point of view, as he sees no attractive cultural quality in socialist city building so far, but the cultural perspective is not the starting point of his analyses.

The statement of God and Enlightenment as the main villains in Sennet's universe must be further explained though, if we are to understand him right. The God in question is the Christian God, and the problematic aspect of Enlightenment is its quest for a Grand Unity of everything. For Sennet, the common denomina-

tor of Christianity and Enlightenment is the perversion of the relation between inside and outside in a way that promotes inwardness and cripples outwardness. The problem of Christianity goes all the way back to the early middle ages, as expressed by Augustin's rejection of the worldly city in favour of the city of Heavens. The problem of secular Enlightenment, on the other hand, is its attempt to overcome contradictions by escaping them in the name of unity, or by trying to brutally enforce a non-contradictory unity. This, of course, is doomed to fail. Inwardness continues as a result. To Sennet, the inward-outward axis of orientation is related to the questions of relations between private and public life (and private and public space), as well as to the relations between the Self and the Others in more general terms. Sennet wants to turn people outward instead of inward – towards the streets and the encounter of human differences – instead of towards the home and the psychoanalyses with or without professional help. You could say that Sennet think it is both necessary and possible to break out of the mutual contradiction and unity that is a driving engine in most of Woody Allen's films – the alienating metropolis and a growing need for psychoanalyses.

But to turn outward, Lefèbvre would say, is extremely difficult in a society based on private ownership to capital and land, and in a society dominated by large corporations and public bureaucracy. In spite of that, Lefèbvre would agree that every possibility to turn outward should be cared for. In the end of *The Production of Space* he actually mentions the possibility of a reformist strategy towards differential space and a new society.

In a moment, we will get back to Lefèbvre's and Sennet's conceptions of the city to fight for, but before that let us look at the first diagram.

The Abstract space/Differential space dimension can be seen as an axis of spatial production, the Inward/Outward dimension as an axis of spatial orientation. The crossing gives us four quadrants:

A Problem,..

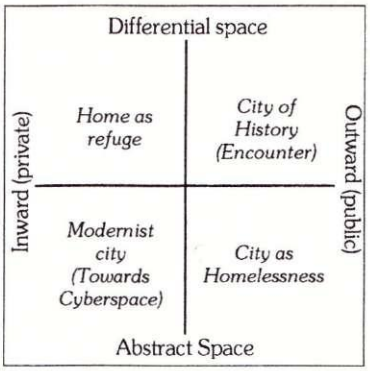


Diagram 1

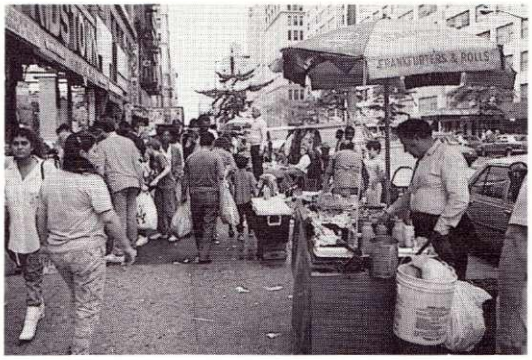
The first quadrant of "Diagram 1" can be interpreted as the "City of History" in a double sense – both as the historical pre-modernist city of streets and squares, which is as old as the preserved history of human societies (about 10 000 years) – and as the city, where time makes a difference. This is the city of human encounter of other humans in real life, and the encounter of culture of different times.

The third quadrant – the diametrically opposite – can be interpreted as the "Modernist City". This is the city of advanced capitalism: an urban anti-space of isolated and inwardly oriented built objects sprinkled in a technological landscape, interwoven with distance-keeping lawns to look at, simulating naturalness and simple countryside pleasures. Although this city is heavily focused on time – trying to catch up with time all the time – it kills time, as it can only develop through the destruction of history and through repetition. This is the reason, why Berman's book on modernity (1982) got its title from Marx' and Engel's Communist Manifesto: *All that is solid melts into air*. Modernity is the new as ever the same. In this "City of modernity", there is not much encounter of real and different human beings. On the contrary it becomes increasingly clear, although Lefèbvre and Sennet do not say much about it, that the ultimate "Modernist City" is an electronic network. Skyscraper areas are still being built in the image of downtown Chicago, Manhattan and Le Corbusier's "Plan Voisin", but the true mo-

areas and was French. He wrote on "everyday-life" already in the 1950s. From 1968 to 1974 he took up questions of the city – not only in relation to different modes of production as seen from a Marxist "systemic" point of view, but also as an urban experience of humans living in the city – the city as lived space. He even claimed the city a human right. Later he had to focus on the role of the modern state (Lefèbvre 1968 and 1974).

In his last book on the city – *The Production of Space* – Lefèbvre heavily states the human need of difference as counter-weight to everyday routine, and the decisive role of difference in opening up new social and political opportunities. As capitalism creates contradictions in urban space, spaces of difference emerge, that can be transformed into counter-spaces of new human possibilities. If we cross-read his books on the city and on space thoroughly, we will find that the important qualities of differential space and counter-space have to do with aspects like: social and other human differences, the meeting of strangers, play and eroticism, human works as unique objects, possibilities for the unplanned, unpredictability, inter-change and inter-active communication, as well as the use of all senses. All this should be human rights in urban space, according to Lefèbvre! There is not much to learn about an urban design of difference in Lefèbvre's books, though. He also thinks that architects and especially urban planners normally do more harm than good.

Sennet's characteristics of his urban spaces of interest resemble those of Lefèbvre's in many ways – including the encounter of strangers – but Sennet explicitly mentions the street, as the most important general aspect of the city. When it comes to the question of urban design, Sennet is also as negative about the professionals involved, as is Lefèbvre. Although Sennet tries to find the keys to an urban design that makes a difference, he does not come up with very much of direct practical use either. He clearly is in favour of discontinuities and non-linearities in social space as well as in physical space, but



14. Street, Manhattan, New York City. One of Sennet's favourite contemporary streets. Photo: Bo Grönlund, 1988.

nobody can learn how to build cities from his book. The distance from theory to practice is either too far, or his advise are already better described elsewhere in some of the more practical urban design literature.

Anyhow, the facts remain that the urban spaces of encounter, difference and possibilities which Lefèbvre and Sennet have pointed to need to be further investigated, as well as the knowledge and the design practices that can promote them. To focus on the city of encounter is to focus on strangers, randomness, chance, the unexpected, discovery, adventure, etc. – and it is to focus on the space outside, that is to focus on the streets of cities.

On the role of urban complexity – socially and physically

Cities, as physical entities, are often seen in opposition to nature, but in nature, as well as in the city, both ordering and chaotic processes are at work. And both develop through time. The result is complexity. Today there is almost no nature, that has not already been altered by man. Man does not live in first (not manmade) nature any more, but in a second (manmade) nature. The city can in fact be seen as the most complex part of this second nature. First nature, as well as second nature, starts off from rather simple forms, and develops towards the more complex. The same is true of the capacity of the individual human being in his or her development from childhood to maturity. As human beings with

dernist city of today is the electronic portable office of combined mobile-phones and portable computers, including portable fax-machines and networked modems, connected to satellite-based world wide services 24 hours a day. If You want to, You can even include global satellite navigation systems with a guarantied accuracy of 18 meters. If You have the right equipment, it does not matter where on the globe You are, and at the same time You can be sure that You cannot get lost, except in the electronic networks themselves. We now begin to see, that the ultimate modern city is made up of virtual realities located in cyberspace: the anti-space of real experiential space (Rheingold 1991). Maybe, it is the almost invisible technological basis of this modern city that makes it so difficult for architects to find a new aesthetic representation of contemporary space, although they try so hard?

The second quadrant of "Diagram 1" can be interpreted as the "Indoor Private Home", where we can escape to the safety of the familiar, our personal things and the shallow depths of spatially and socially contained intimacy. This is not to say that we do not need homes, or that the heavy focus on housing in the modernist city has been all wrong. On the contrary: the home is necessary for the development of individual human beings. At the same time though, it is to state that the home is a trap, if it is not complemented by a city of encounter. Today, the threat to the family is not located as much in the streets, as it is in homes of isolation. (In Denmark in the 1990s most murders take place within the family, and if we look back we will see that in the period when we built the homes of the modern city, the number of people in Denmark with a psychiatric record grew to comprise 1/5 of the total population. This might be sheer coincidence, but there probably is some kind of relation between the different phenomena).

The fourth quadrant can be interpreted as the "City of Homelessness" – in the double sense of an outside world that we do not care about, and a home for the really homeless – the backside of the coin of the modern City, exploding in the face of us all over the Western industrialised world, including in the Scandinavian well-fare states.

Why do abstractness and inwardness contradict urban possibilities and urban life? This should be a little more clear by now:

Abstract space is intended to generalise exchange value. As a consequence space is planned in a way that contradicts the promotion of difference. Town planning and building codes contribute to enforce homogeneity to a large extent.

As for inwardness: as long as we focus too much on inwardness, people are separated from the differences of other people, and in the end they get alienated to themselves. We get lack of solidarity and psychological problems. If we do not experience ourselves in direct relation to others, the others get unreal to us and we get unreal ourselves too.

It is a big problem, that our society has been extremely afraid of difference in real life. At the same time the large need for difference is shown by the obsessive focus on difference in entertainment and sports through various kinds of media.

On the space of urban possibilities – as contrary to abstractness and inwardness

Much urban sociology and urban geography have spread confusion on the urban question, not only World War II regionalists like Mumford, but also left-wing intellectuals of the last two and a half decades. Manuel Castells killed the city as a theoretical object in the beginning of the 1970s (Castells 1972). But it turned up again in the form of "collective consumption", then metamorphosed into the question of spatial and social practices of "everyday-life" routines, and a female perspective on the role of the local community.

Lefèbvre was there all the time, taking part in the discussions, but not very many listened and even fewer understood what he tried to say. Admitted, he was difficult, tried to cover vast

roots in nature, we can't live with pure order. We can't live with chaos either. We can only thrive in complexity.

Both first nature and second nature need a differential space for complexity to develop and to remain. It is at the edges of difference, that life develops most intensely, whether that is e. g. the edge between a forest and a meadow or the edge between private and public space, buildings and street.

The transitional part of nature bridging the gap of first and second nature is the human body itself. The body is the key to humanity, to human complexity, and human space. Whatever mental differences between people – based on different social and economic conditions, culture, individual differences, preferences, etc. – we all have bodies and understand, more or less consciously, that this is the starting point for all of us. Further we all have had a childhood, that in the beginning was body without consciousness. Our ability for sympathy and empathy is basically related to the body. To accept our bodies and wish the best for them is the key to humanity. (But it is not enough: the urban condition of strangers is another, as we shall see in a moment.)

The body is itself very complex, and includes rhythm, symmetry, front-back, left-right, up-down, body and limbs, warm-cold, colours, growth, ageing, sub-consciousness, etc. – and it directly affects clothing and housing as well.

The latest knowledge on the information-handling of the human brain- and nerve systems show that the capacity of our bodies is far larger than our consciousness. Our senses receive millions of bits every second, but our consciousness can only handle about 16 bits a second (Nørretranders 1991). The rest of the information-handling is subliminal. The question of subconsciousness is thus much greater and far more general than Freud thought. Human beings are only partly in control of their bodies. Much philosophy and religion have therefore denied the body, often with disastrous results (Lefèbvre 1974, Nørretranders 1991).

Our understanding of space has to start from the body, because this is from where our human experience starts. Space gets its qualities and quantities through the body. Our body is not like that of a bird, a snail or a fish. Therefore our spatial experience is not related to being in general but specifically to human bodily being.

Concepts of thought and the uses of language are developed in relation to bodily practices as well. Lakoff and Johnson (1980) have shown that metaphorical language is the vehicle of consciousness and builds on elementary bodily experiences. This is why it is possible to say that the body is in the mind (Johnson 1987). Experiences that we can not handle directly, we understand and express through metaphor (and metonymy), and this at the same time constitutes a common basis for creativity applicable to both science and art. That is to say, we handle complexity through metaphor, and by metaphorical creativity human reality grows ever more complex.

A Perspective..

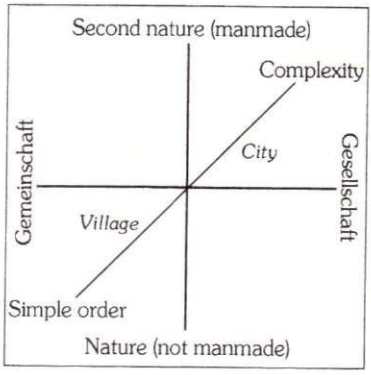


Diagram 2.

Society includes the question of complexity too. Tönnies' concept of a polar axis of society as expressed in the opposition of Gesellschaft to Gemeinschaft, is here an especially interesting one, and it has recently been discussed by Asplund (1991). To explain it very shortly, Gemeinschaft is the traditional kin-based village society, while Gesellschaft is the money based society of strangers in the City.

The bridges between Gemeinschaft and Gesellschaft are money and the individual. Both

Gesellschaft in Paris: Between the Centre Pompidou and Les Halles. Photo: Bo Grönlund

take on new importance at the end of the Middle Ages through the growth of trade and the division of labour. (Asplund 1983, Nørretranders 1990). The individual is a phenomenon related to the development of a money economy. Money makes the free individual possible, which in turn further promotes the money economy. This adds a new level to complexity. Not only is there a personal history behind every individual – a history that is partly unique – but individuality as a general category is in itself historical. It emerged with historical time in antiquity, almost vanished in early Christianity, reappeared in the late middle ages and was reinstituted with the birth of the Renaissance. In the 1960s the transformation of industrialised western man to individuals had come so far, that almost every child had a bedroom of their own, i. e. a built space of their own – a situation unprecedented in human history. From this stage the question of individuality increasingly becomes a double one – from basically depending upon growing separation to the double question of separation and relation – from the focus on the "I", to the focus on the relation between "You" and "I". In the city this question necessarily have to include the question of people, that You do not know: people from other city districts, anonymous people, strangers, foreigners, great numbers of people and differences of culture too large for anyone ever to get to know them all. In this situation of Gesellschaft humanity and humane development is related to the acceptance of strangers, not only to keep up peace, diversity and creativity, but as a condition for the further development of individuality as well.

Simmel already understood almost a century ago (1903; 1908) that an important part of urban social relations has to do with strangers, but 20th century sociology has focused almost entirely on interaction between and inside groups and classes as collective phenomenena and not very much on the interaction of individual strangers. Psychology on the other hand has focused on the single individual either in close relation to fa-

mily experiences or on the relation between the single individual and the physical environment. Therefore the meeting of strangers in urban space has been a field of only sporadic attention. Asplund has recently pointed to the importance of "elementary social life" and elementary social responsiveness which can take place also among strangers (Asplund 1987). He has further noted, that randomness and coincidence has become an integral and essential part of the urban conditions of life, that is of Gesellschaft (Asplund 1992).

The perspective on social relations has been too narrow also in other ways. Beginning in the 17. century, a mechanistic world view developed (as a result of Newton's discoveries, etc.). Although this world view started to disintegrate with early 20. century physics, it continued to influence society. It so happened, that the mechanistic perspectives of modernist architecture and city-planning reached its full development at the very moment when the mechanistic perspective broke down in modern physics. Within the mechanic modernist view the city could best be compared to a machine, and as a consequence urban development had to be looked upon as strategic planning, where one decision-centre knows what is best for people and therefore can plan for them (essentially without asking them). Habermas' critical discussion of modernist rationality has a lot to do with this, and he now favours a theory of communicative action (Habermas 1981 and 1988.)

Habermas' communicative actions originate in Gemeinschaft too, but first really become a problem in Gesellschaft, with its growing complexity. A focus on communicative action – contrary to strategic action – as a model of social development, has deep consequences for the understanding of cities, as has Habermas' complementary notion of system-worlds versus life-worlds. The concept of communicative action makes it possible to take into account both normative and expressive social processes, as well as the socialisation and maturing from childhood to adulthood of each individual.

During the last 25–30 years efforts have been made to understand complexity in architecture and urban development through analyses of languages, especially through semiotics (i. e. Gottdiener & Lagopoulos 1986 and Nyman 1989). As language has to with communication, it is tempting quickly to go further into questions of language. Urban space is full of language: spoken language, written language, bodily gestures, fashion and personal expression of clothes and other attributes as well as of the body itself, pictograms, architectural language, etc. Languages enforce the notions of difference, as well as the possibilities of identification and encounter (but also for the possibility of alienation). The different kinds of language add to the complexity of urban space. Although semiotics may have something to contribute to all kinds of language, it is important to note, that spoken and especially written language is only one part of the spectre of languages, and that different languages have different backgrounds and different rules. Visual and musical languages are quite different from spoken and especially written languages. As the city contains all kinds of language at once, a study of the city as language is an immense task, which is very difficult to undertake. This takes us straight back to the questions of complexity.

The notion of complexity is difficult to grasp in practical life, and even more difficult to handle theoretically. Or, properly, it has been until recently. Today information theory and "chaos" theory has a general understanding and definition of complexity, although there is no general way to measure or compute it in practical life (Nørretranders 1991).

Complexity is neither simple order nor a complete mess. It is something between order and chaos, and it grows at the edge of chaos. A complete mess or chaos cannot be represented in any shorter or more compact way than the mess itself. A simple and static order on the contrary can be represented as a short formula. Complexity is different from both of these, and although it often is a result of rather simple formulas too, it in-

Complexity through discarded information (overlapping and incomplete layers of time). A wall in Prague. Photo: Bo Grönlund, 1992.

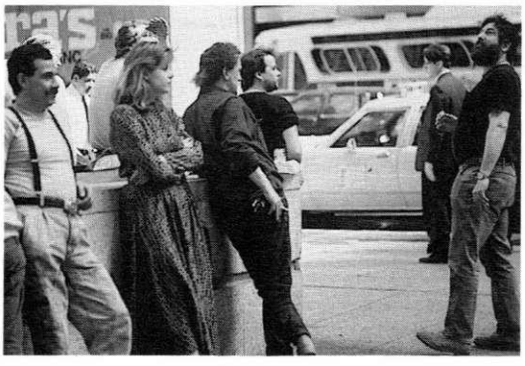
cludes iterations, the repetition of patterns – taking part of the result of the former round as the input to the next – and most often also adding some randomness to the process. This means that complexity is a result of a process unfolded in time. From the point of view of information theory, complexity is the result of information that has been discarded. Only in special cases is it possible to figure out the kind and amount of discarded information. This is why there is no general way to measure or compute complexity in practical life.

The new theories of chaos and complexity, which has been developed since the late 1970s and with the necessary help of computers, are changing our view of the world and the view of ourselves (Gleick 1987). They show that complex patterns can grow from simple formulas, i. e. fractal patterns, and that many processes are non-linear, discontinuous and irreversible. The forming of structures or patterns over time that are neither simple nor completely chaotic, is the creation of depth. To humans this is related to meaning (Nørretranders 1991). This becomes important as the new theories cover several scales at once, also scales relevant to the size of man, unlike the theories of most modern physics that tend to concentrate on the scales of the atoms or the universe. Suddenly science is related again to immediate experiences of everyday life.

Out of all this we might begin to understand that we can not escape complexity. We have to learn to live with it. But what should be understood as complexity from an urban design point of view?

The social complexity of the city must basically be understood as Gesellschaft, not as a collection of Gemeinschaft. This is not easy to do right away, as urban planning in the 20. century has focused so heavily on the promotion of Gemeinschaft through the construction of family dwellings and neighbourhood units (Franzén & Sandstedt 1981, Grönlund 1989). Social complexity cannot be fought by making the city less complex though, as this will reduce outward activity and increase personal psychological problems. Lack of outward complexity will also hit the weakest groups hardest, because they will be left with the worst parts of abstract space.

The physical complexity of the city, first of all has to be seen as a street phenomenon. Streets are at the same time the general ordering structure of the city and the kind of space where urban encounters can take place on a wide scale in everyday life. Physically complex urban space in the form of urban streets increases outwardness: private services as well as out-ward oriented do-it-yourself activities, the meeting of strangers, coincidence of trajectories, etc. Urban streets of this kind, that at the same time contain the possibilities of incremental change, further the creative aspects of Gesellschaft, while abstract space or physical complexity understood wrongly will further the destructive aspects of Gesellschaft (alienation, crime, etc.). In *The Metropolis and Mental Life* (1903), Simmel has pointed to both



A meeting-place of un-completion, a meeting-place of keeping apart, a place of simultaneous chaos and normative rules with the possibility of partial involvement and easy withdrawal. A street corner at 6. Av., Manhattan. Photo: Bo Grönlund, 1990.

the creative and destructive aspects of Gesellschaft, so this is nothing new – but, with a few exceptions, there has been no reasonably developed understanding of this in relation to the planning and design of cities. When e. g. Åke Andersson (1985) discusses creativity and the city there is not much focus on outdoor public space – the perspective is most often institutional or technical (i. e. infrastructure).

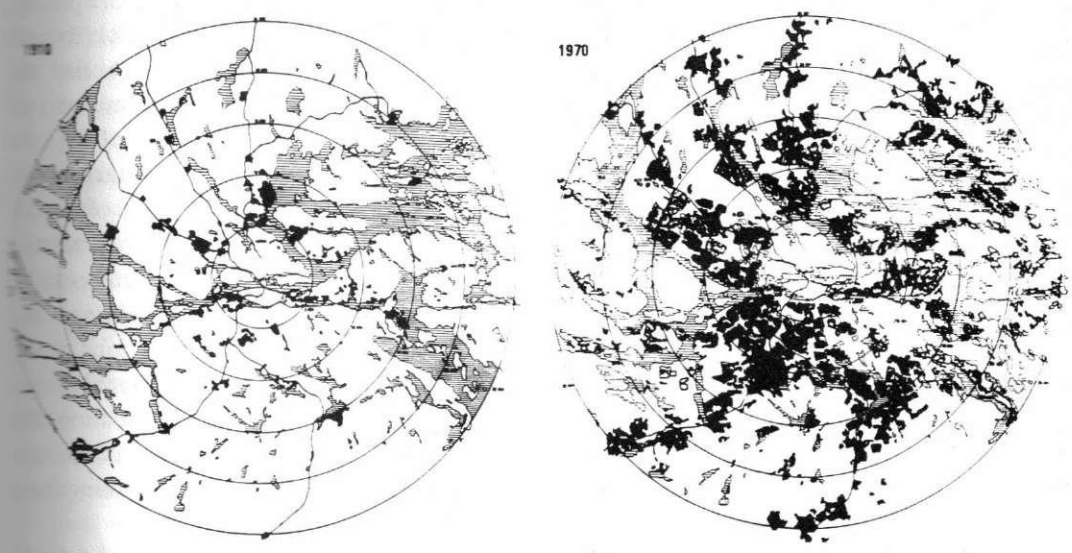
Rapoport is an architect, who also being an anthropologist, explicitly has dealt with complexity, though before the most recent scientific concept of it, and not as a dominant aspect of his theories (Rapoport 1977). He has e. g. pointed to the very different basic conditions of motorist highways and pedestrian based streets. The last need to have a lot of complexity at several different scales at once, not to be boring (Rapoport 1987).

Concerning the network of streets, Hillier & Hansson (1984) show that the nature of complex geometrical pattern of urban space has a profound influence on the distribution of people's movement and the location of activities, most modern space being highly segregated (i. e., fractal according to Batty, 1991), while older deformed street-grids normally integrate. Hillier (1989) has also shown that highly integrated outdoor urban spaces, containing people in a socially undifferentiated way, constitutes a virtu community of possible encounter. Urban stree are essential to Hillier's concept of urban lif but Hillier's theory does not include absolu population density (and therefore not the soci effects of crowding), nor does it include wh goes on in the city at heights above appro imately 2 meters (i. e., the level of the eye). Ne ther is he interested in what the facades loo like, except the number of entrances. On th other hand Hillier's *Social Logic of Space* in cludes an understanding of the generation c complex social-spatial patterns from a combi nation of simple rules and randomness. In Hi lier's theory depth of space is also very impor tant (being counter-integrative). This spatial no tion of "depth" is quite different from the histo rical (time-based) notion of "depth" in the theo ry of complexity.

Eneroth & Wangsjö (1991) also has contri buted to the understanding of complexity of so cial relations in the city, especially concernin sexual relations. Situations that are partly chao tic are unavoidable, necessary, and in fact con sciously created and institutionalised. They ca this the meeting-places of uncompletion, th meeting-places of "keeping apart", etc. – place of simultaneous chaos and normative rules wit the possibility of partial involvement and eas withdrawal.

As complexity has to do with processes, tim is a necessary and important dimension. Wha matters in urban space is time that makes a dif ference. Benjamin developed an understandin of this already in the 1920s and the 1930s. (Ben jamin, 1982). Time that makes a difference i what Benjamin's dialectical seeing in the Ar cades Project is all about (Buck-Morss,1989) To sense and understand now-time, objects an traces of the past have to be present. Otherwis there is no points of reference, no support fo critique.

Modernity's relation to time often goes agains complexity though. Berman (1982), as mentio ned, has shown that modernity is the tragedy o



Housing areas in the Stockholm metropolitan region outside the urban core in 1910 and 1970 – the outer circle has a radius of 25 km. (Ingemar Johansson: *Den stadslösa storstaden* (*The townless city*) *Förortsbildning och bebyggelseomvandling kring Stockholm 1870–1970*, Byggforskningsrådet Rapport R26:1974, Stockholm).

destruction in order to create the new as ever the same. In this way, post-modernity has to run in front of modernity. It is inherent to modernity to try to reduce complexity, because modernity wants everything to be new. Sometimes it succeeds with devastating consequences.

Through a developed notion of complexity, the questions of the theoretical status and usefulness of the concepts of human ecology and urban ecology may possibly also be interpreted anew . Maybe the decisive aspect that unites the general concept of ecology with "human ecology" as it was understood by the Chicago school of urban studies in the 1920s is complexity? And maybe the understanding and liking of complexity can save the "urban" in the "urban ecology" of today from being anti-urban from the outset (Grönlund, 1993a).

Towards an understanding of complexity in the theories and practice of urban design

At this point, we are faced with the difficult question of what kinds of cities we want, a question that does not become more easy, as we in the 20th century have built so much already. The amount of floor-space built since 1920 is enormous, and unprecedented in human history. The quality of urban space is another matter.

The question of complexity of urban design certainly has to be broken down into groups of detailed and specific aspects, which cannot be discussed here. They have to be further elaborated through research programs. Here, only some starting points for an urban design of complexity will be indicated.

From a social point of view, the city of complexity is identical with the city of social diversity, interwoven with some social homogenisation in various areas. Diversity should be seen as the dominant aspect, homogenisation being accepted to some extent as a spatial expression of different subcultures of choice. Social homogenisation through standardised abstract city-building promoted by the state or by corporations should be avoided, as this will create an anti-city, which most easily can be compared to institutions like prisons or to company towns.

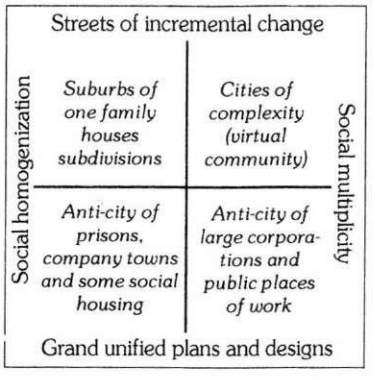


Diagram 3.

Social diversity has proved to be quite difficult to build into new city areas, although it increasingly has become a goal. Socially mixed housing is hard to achieve in practice for many reasons: a segregated housing market with several different financing and economic support systems, the scale of operation of public and private planning and construction agencies, publicly enforced penalties and premiums adversary to moving from one dwelling to another, and the lack of a unified taxation system in metropolitan areas, as they normally are split up into different communes with different taxation-levels, that has little to do with the level of services. Although it is not easy, large scale housing segregation can and ought to be countered. The means to do so have been described many times, and shall not be repeated here (See e. g. Grönlund, 1986.)

The question of integration of dwellings with services and places of work in new city areas has proved to be even more difficult, also where it has been programmatically wanted. The large size of many contemporary units of work is part of the problem. The difficulty to plan for them in advance together with housing is another. Services and places of work cannot be dictated to move into new buildings, unless they are all public enterprises. Public enterprises can be no general solution, though – only supplementary – as we need to stabilise the public sector from a taxation point of view, to release the potential creativity and activity in people, and to promote marked-based private services.

We have seen, in Høje Tåstrup and other places, that large contemporary places of work kill street life. It should be remembered though, that the large corporations do not contain the majority of jobs in the contemporary city. Most of the jobs are to be found in middle-sized and small firms, and in the public sector. Although it is often true that the public sector also has a built in tendency towards hugeness and centralisation, this can be fought and changed politically. What is most important, the large numbers of new jobs are in very small firms, while the large private corporations lay off people through automation: the ultimate robotised corporate factory or electronic office having almost no people working there at all.

Today, many of the newly created jobs in small firms are invisible, as they often take place in inward-oriented homes. This may reduce the possibilities for their further development: for co-operation, for direct advertising in urban public space, for interplay with the public, and for activities that need shop or workshop kind of spaces. The only real advantages of dwelling-based small firms are reductions of costs of rent, less commuting, and the possibilities to overlap work with family duties. The last two could be taken care of in the traditional street-shop environment as well with shops at ground level and dwelling on the first floor. The main obstacle is the cost of renting floor-space for work. This brings us back to the financial basics of contemporary societies and new construction, as well as to the taxation systems, that hamper the establishment of small firms.

This is to say that the potentials for many places of work are there, if properly taken care of. It is not the primary task in this paper to fight for financial and taxation changes – others have to take on the major burden of this – but to argue for the re-introduction of the kind of streets, that can contain a lot more activity and complexity, if supported by economical changes as well.

If social diversity versus social homogenisation is the major issue of social complexity in the city, then the major issue of physical com-

plexity probably is the axis of "Grand Unified Plans and Designs" versus "streets of incremental change". "Grand Unified Plans and Designs" has been the dominant tendency of city-planning and architecture since the beginning of the renaissance period. The Italian city of Ferrara of the 1490s is probably the first modern city in this sense and at the same time the first street-killing at a grand scale through the building of completely inward-oriented palaces at the most important street crossing of the new city extension (Zevi 1960, Benevolo 1968). "Grand Unified Plans and Designs" were further strengthened through the succession of Baroque, Enlightenment and Modernist ideas of building.

The implementations of "Grand Unified Plans and Designs" have had their ups and downs since the 15. century, mainly as a consequence of economic ups and downs, and the degree of centralised government – the states of absolute monarchy and the 20. century corporative states being the most dominant promoters of these kinds of plans and designs. The more decentralised and democratic the state, the less "Grand Unified Plans and Designs" and the more incremental physical additions and change we will find – although it is not therefore true the other way around.

One important reason, that makes the mixing of social groups and the mixing of activities, dwellings, services and places of work so difficult, beside the reasons mentioned earlier, is the way modern cities are planned and built as "Grand Unified Plans and Designs". This is precisely where the killing of streets and their necessary re-birth comes in.

Streets can have two different basic kinds of character: The absolutist or corporate street on the one hand, with a strong will towards physical homogeneity, or at least with a strong will to decide almost everything about the street from one centre of decision-making, and on the other hand the democratic incremental street, accepting physical heterogeneity and decisions with many centres. In this way, there is a relation between the physical appearance of the street and the way in which the decisions about the street take place. Some corporations and public agencies want to build streets today that look physically complex, through decision-making at only one or at a very small number of decision centres. This may fool somebody for sometime, but not many for a long time, unless these kinds of streets are left to become more truly complex later on, and their spatial structure permits it.

The question of incremental additions has been raised before, e. g. by Christopher Alexander in his *New Theory of Urban Design* (1987), but it has not been done consequently from the point of view of the urban street. The city of true complexity has democratic incremental streets and a street pattern with a high geometrical integration (measured with Hillier's toolcase). These streets create a virtual community of potential encounter of strangers. New York's Greenwich Village is an example, which shows that contemporary art and culture do not grow best in modernist space, but in old industrious streets.

The fourth quadrant of Diagram 3 – the possibility of simultaneous social diversity and "Grand Unified Plans and Designs" – was more difficult to label, than the rest. The only union of social diversity and "Grand Unified Plans and Designs" we immediately can think of, are in the built work-place structures of large corporations and large public administrations themselves – but here the free admission and initiatives of people are severely restricted. The functioning of these structures is also mainly inwardly oriented towards the organisations themselves. Therefore they are "anti-city".

If it is true, that social diversity is impossible in "Grand Unified Plans and Designs" at the level of the city, then urban planning and architecture have to do serious rethinking.

In the end we find a new polar axis, a new overall contradiction that contains the essence of the urban question today. This is an axis between the 3. quadrant of the first crossing (Diagram 1) and the 1. quadrant of the third crossing (Diagram 3) – or to speak out: between the

modernist city and the real city of complexity. This, at the same time, is the axis of electronic virtual reality tending towards cyberspace, versus a virtual real world community in Hillier's sense of the outward, urban street-form of possible real encounter and open solidarity of strangers. This axis is not an axis that we can choose to have or not to have. As the coming of virtual reality is unavoidable – and it is almost already here – the only thing we can possibly do to create a balance, is to complement virtual reality, as much as we can, by building real city streets.

If complexity is a result of a historical process, it can be questioned if urban complexity can be designed at all. As the notion of "Grand Unified Plans and Designs" has pointed to, we very often think of urban planning and design as an all comprehending, integral and complete single project for a part of a city including several buildings, a part of a street network complete with furnishing, etc. These kinds of plans and designs most often reduce complexity, although some complexity can be included or added by keeping parts of earlier nature and/or buildings, or by having several architects working independently, but with some set of design rules for the project.

True complexity can not be designed in the form of an overall project, though. It has to grow piecemeal through gradual intervention of different actors representing different economic units (i. e. different decision units). This raises the question, to the degree that urban planning and urban design can be avoided as overall integrated plans and designs: a difficult question in societies of rapid economic and technological change, paired with lack of cultural rootedness, and including cultural diversity. Beside, this question might threaten some established systems-worlds and professions as well.

What then, could be the role of architecture in a city allowing and promoting incremental physical additions and change? Does it mean that professional architects are no longer necessary? No, but architects' understanding of their own professional role to some extent will have to change. Architecture is originally not a profession, but a way to build according to the needs and desires of man and in the context of the surrounding environment. This is, why we can talk about architecture without architects. On the other hand, the ways of building like most other things, including language and technology, grow increasingly complex, thriving on the division of labour and the growing complexity of society. Insofar as architects will be able to sell their services – on the free market – to clients of incremental and fragmentary streets, the profession of architecture has a future from a general city point of view and not only with regard to some monuments here and there.

Finally, incremental and fragmentary streets need not necessarily be ugly. Harmony and homogeneity are to some extent necessary for an aesthetic experience to take place, but changes and breaks are necessary too. The question of ugliness – as of beauty – is a double question of aesthetic ideals and communicative action, including the question of languages of architecture and the character of the decision-making process. It also includes the question of time and the speed of change – as the dialogue of architectural expressions in real life streets takes place at the slowest of all paces in human society – some built individuals along the streets making statements and raising questions, that might first be answered with a delay of years, decades and even centuries. The question of architecture as language should basically be seen as a dialogue between buildings through time.

Today, the greatest difficulty of implementing incremental streets is our impatience. We want everything finished at once and for all, but as incremental complex city streets only become possible as a process of historical development, we ought to allow this process to take its time and learn how to live in the unfinished. The alternative to unfinished streets will often be dead streets.

How, then, can urban complexity be studied more systematically? What methods of work can we use?

Stengade, Elsinore, Denmark. A street that has been allowed to develop and change through many years. Photo: Bo Grönlund, 1990.

Not much systematic study and evaluation have been made of the simultaneous question of social and physical complexity as aspects of urban design – as far as we know – although the question pops up partially here and there, mostly in an implicit way. There is a great danger, that the "rules" of the games of planning and architecture today are not corresponding to appropriate levels and kinds of complexity, that is stimulating to urban people. Because of this, there is a risk that e. g. deconstructivist design theories favour certain kinds of architectural and urban complexity, that may have a negative mental and social impact.

Most architectural and urban design theories that include aspects of complexity, do so mainly in a physical way, without much idea of how physical complexity might influence social complexity. And few theories of social complexity integrate aspects of physical complexity, other than in a negative way as a setting for crime, etc. – as expressed in metaphors like "the jungle of the metropolis".

Architectural and urban design theories also mainly look at physical complexity in relation to the task of the single artist, not in relation to a collective process and a process unfolded in time. The ultimate reason for this may be the tendency of secular society to substitute God with the artist and eternal life with the untouchability of artistically created objects.

The result is that planning, urban design and architecture decide either too much or too little, or both at the same time in the wrong combinations.

How, again we ask, can investigations into the urban design of socially and physically complex streets be carried through? As a first stage, non-architect theories and aspects of complexity in general and especially urban complexity have to be collected, ordered, critically reviewed and listed in a concentrated form. This to some ex-

tent may have to include the questions of complexity in languages, especially in the visual arts and in music.

The first stage being non-architect, hopefully makes it possible to get relatively stable points of reference outside the world of architecture and urban design itself. This article hints at some basic points, although this stage will have to be more comprehensive and discursive, and include aspects that have been left out here: e. g. more on the question of language.

At the next stage, investigations can be carried out on two different levels:

1) Critical studies of existing theories of urban design, extracting aspects and methods that seem to promote streets of complexity, at the same time criticising theories of design that lead to different kinds of abstract, inward-oriented, too homogeneous and "grand unified" city building. (This does not imply that all aspects of partial unities have to be thrown over board.) The urban design theories to study and discuss here ought to be selected both for their possible positive and their possible negative impact – in a double quest to promote life and complexity and to fight paralysing simple order.

2) Thorough empirical studies of selected city districts and streets to extract aspects and methods from real life experience. These studies ought to be from different parts of cities with different histories and typologies. They certainly will have to include the new city districts built with intentions to create urban streets, and older city districts with streets full of life and complexity. At each level it is necessary to look at both the physical and the social aspects of complexity, and postulated relations between them. In this way the basis for the further development of theories and methods of an urban design of complexity can be developed.

Empirical studies might be possible with a combination of methods developed by Hillier (1984), Gehl (1991) and others. But as soon as the practicalities of such empirical studies pop up, we need the critical assessment of urban design theories in combination with more general theories developed by the human sciences – as there can be no empirical study without some kind of implicit or explicit theoretical basis – and it should rather be explicit, the demons we are up against indeed being tricky.

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