

**Theories of neighbourhood change and neighbourhood decline:
Their significance for post-WWII large housing estates**

**Paper for the ENHR-conference “Housing in Europe: New Challenges and Innovations
in Tomorrow's Cities”, Reykjavik, 29 June – 2 July, 2005**

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Abstract

In the 1920s, researchers of the Chicago School developed what is often considered as the first theories and models designed to explain neighbourhood change. Subsequent research into neighbourhood change has been carried out in many different ways and has focused on different fields. The early researchers considered neighbourhood change as a more or less inevitable result of a filtering process that causes changes in areas with an ageing housing supply. Others have paid more attention to the importance of a strong neighbourhood attachment, while again others have referred to the impact of larger economic and social transformations on neighbourhoods. Researchers have also aimed to capture the process of neighbourhood change, and of decay in particular, in all-embracing models in which several variables and developments are linked. Despite the comprehensiveness of many models, we think none of them is all-embracing; there is still room for improvement and addition. This paper sets out an approach, which combines crucial elements of different theories, approaches and models. The aim is to find out how we can use the existing theories in the case of the post-WWII large housing estates in Europe. Especially in these areas significant physical, economic and social changes have emerged in the past two decades. The central questions to be addressed in this paper are therefore: To what extent can models and theories explaining neighbourhood change, and decay in particular, be applied to post-WWII large housing estates in European cities? And how can the useful elements of these models and theories be combined to explain the development of European post-WWII housing estates?

1 Introduction

After WWII, many European countries have been confronted with an enormous housing shortage. Thanks to new building techniques a large number of new dwellings could be built in a short period of time. This resulted in the construction of large housing estates in most European cities. Initially most of these neighbourhoods functioned well on their respective housing markets and many residents were satisfied with their dwelling as well as with their neighbourhood. At present, however, a large number of these post-WWII housing estates are confronted with all kinds of problems, such as vandalism, pollution, selective migration and high levels of unemployment. Until the beginning of the 1990s, research was not so much focused on the changes in post-WWII neighbourhoods, as political attention was concentrated on the renovation or sometimes even on demolition of pre-war housing estates as well as on realizing new housing estates elsewhere (rather than on post-WWII housing estates) (Priemus, 1991). Since the 1990s however, attention for post-WWII large housing areas has increased, mainly because problems have enlarged.

The main aim of this paper is to find out if existing theories of neighbourhood change and decline can be used to explain the current changes and, particularly, processes of decline in these post-WWII housing estates. Throughout this paper we use the definition of neighbourhood change, as used by Temkin and Rohe (1996: 159): “*neighbourhood change encompasses a variety of objectively measurable changes to a neighbourhood’s physical and social environment*”.

Already in the 1920s, researchers of the Chicago School developed models in order to explain neighbourhood change (see, e.g., Park, Burgess, Hoyt). Their work is often considered as the first of a long list of theories and models that aim to explain neighbourhood change and decay in particular (Van Kempen, 2002; Varady, 1986; Temkin and Rohe, 1996; Pitkin, 2001). Research into neighbourhood change has been carried out in many different ways and has focused on different fields. Especially the early researchers considered neighbourhood change as an inevitable result of a filtering process that causes changes in areas with an ageing housing supply (e.g., Burgess, 1925; Hoyt, 1933; Birch, 1971). Others paid particular attention to the importance of a strong neighbourhood attachment as a factor that explains neighbourhood change (Firey, 1947; Ahlbrandt and Cunningham, 1979; Kolodny, 1983),

while again others referred to the impact of larger economic and social transformations on neighbourhoods as important explaining factors (see, e.g., Molotch, 1976; Pahl, 1975, 1977; Lipsky, 1980). However, scientists have also aimed to capture the process of neighbourhood change, and of decay in particular, in all-embracing models in which several variables and developments are linked (e.g., Prak and Priemus, 1986; Grigsby et al., 1987; Power, 1997; Temkin and Rohe, 1998; Skifter Andersen, 2002).

Despite their all-embracing character, these models always seem to stress one or a small number of factors as the most important ones. Some have a clear focus on the decay of European post-WWII neighbourhoods that are characterized by an over representation of social rented dwellings (Prak and Priemus, 1986; Power, 1997; Skifter Andersen, 2001). Other researchers have focused on the importance of resources and constraints or on the influencing role of social capital (e.g., Temkin and Rohe, 1996; Grigsby, 1987). Despite the comprehensiveness of these models, we think none of them is all-embracing; there is still some room for improvement and addition. To our opinion some crucial elements of different theories, approaches or models should be combined. The central questions to be answered in this paper will therefore be: To what extent can models and theories on explaining neighbourhood change, and decay in particular, be applied to post-WWII large housing estates in European cities? And how can the useful elements of these models and theories be combined to explain the development of European post-WWII housing estates?

To answer these questions, first the character of post-WWII large housing estates is described in a general way: When were they built? And why? What are their main characteristics? Which developments can be seen? After this description, we first focus on, what we have called, the traditional approaches to neighbourhood change (section 3). In section 4 several of the more or less comprehensive models in which neighbourhood change is explained are discussed. Finally, we try to say something about the most useful elements of each model and about how these elements can be combined in order to explain the developments in European post-WWII housing estates.

2 Post-WWII large housing estates: their background story

Historical background

After the Second World War, many cities all over Europe were confronted with a lack of sufficient and adequate housing. Caused by the collapse in construction and war damage, and intensified by family formation and the ‘baby boom’ of the 1950s, the drive to meet this housing shortage and to improve dwelling conditions gained priority in many European countries (Turkington et al., 2004). This resulted among others in the development of large housing estates. These new estates, of which some were realized in the 1950s but most of them in the 1960s and 1970s, were often located at the edge of the city using plots of land that had not been built upon yet. Another characteristic of many of these large housing estates is the strict urban development plan according to which they were built. These plans embraced the ideas of that time about the ideal housing area: spacious apartments (for that time) in multi-family blocks surrounding large green areas.

With respect to the basic principles of spatial organization of the neighbourhoods, the separation of land uses was promoted: residential, employment and transport (Turkington et al., 2004; Hall et al., 2005). In this framework, the estates were often planned as self-contained neighbourhoods, so that schools, shopping facilities and general practitioners were relocated to the estates. In many cases, however, these services were realized later than the housing units. Urban planners also had specific ideas about handling traffic; in some areas, like the Dutch Bijlmer or Hungarian Jósaváros, pedestrians’ areas were separated from car

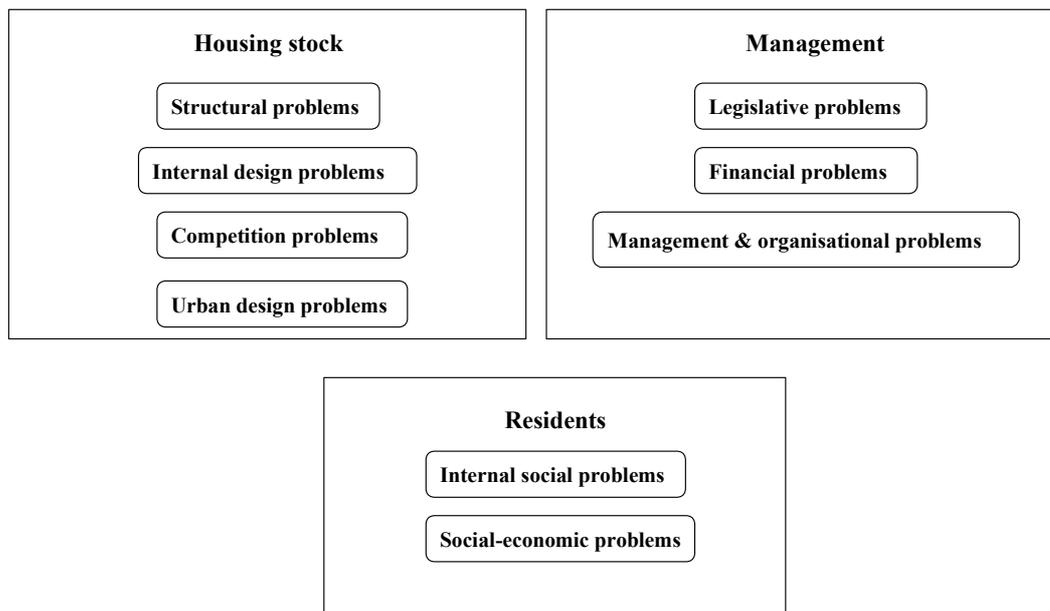
traffic. Also, through traffic was led around the estate (Dekker and Van Kempen, 2005, Hall et al., 2005, Turkington et al., 2004). Apparently, it was in this period that the range of thought of Le Corbusier, who introduced his well-known Ville-Radiieuse concept as the solution to the European housing problem at the third 'Congres International d'Architecture Moderne' (CIAM) in 1930, proved highly influential.

Recently, a number of researchers have studied the present character of post-WWII large housing estates, their position on the housing market and their current physical, social and economic developments (e.g., Power, 1997; Murie et al., 2003; Skifter Andersen, 2003; Turkington et al., 2004; Musterd and Van Kempen, 2005). Also, specific in-depth studies have been carried out within several European projects, such as, UGIS, (see, e.g., Vranken et al., 2002; Andersson and Palander, 2001; Jacquier, 2001), URBEX (see, e.g., Botman and Van Kempen, 2001; Musterd and Murie, 2001), and RESTATE (see, e.g., Aalbers et al., 2003; Andersson et al., 2003; Pareja et al., 2003; Chignier-Riboulon et al., 2003; Černič Mali et al., 2003).

Problems

Initially most post-WWII large estates functioned well on the urban housing market and residents were pleased to live in such an estate. However, many of these areas have been confronted with a variety of problems. Although their type and intensity will differ, in every country problems are evident. Turkington and colleagues (2004) have listed a range of problems, nine in total, that have been identified by several authors (e.g., Heeger, 1993; Wassenberg, 1993; Power, 1997; Turkington, 1997; Skifter Andersen, 2003; Murie et al., 2003). First they mention *structural problems*: the usage of new construction methods and poor quality materials resulted for example in poor sound insulation and dampness within the apartments. Also, *internal design problems* are mentioned. During the years, many apartments were confronted with competition of newly built dwellings elsewhere. Amongst others, this was caused by the fact that many apartments have inadequate central heating, sanitary equipment and storage space. The absence of several amenities such as elevators and communal facilities also played a role. To some extent there is a relation with *competition problems*, which are caused by the low market position of an estate or for example a poor image. *Urban design or spatial problems* are the fourth set of problems and are related to poor location, high building density and for example problems with traffic (e.g. noise pollution). Fifthly, many large housing estates are confronted with *internal social problems*, such as noise pollution from fellow residents or other anti-social behaviour, crime, and/or poor neighbour relations. *Financial problems* exist both for tenants because of increasing rents and service charges, and for landlords who have to deal with problems of rent arrears, vacancies, and maintenance costs. The seventh set of problems mentioned is *management and organizational problems*, which result from inadequate maintenance and insufficient resources. Next, are *legislative problems* concerning the ownership of flats and blocks and the space around them. Finally, *wider social-economic problems* are mentioned: problems such as high unemployment, poor schooling, drug or alcohol addiction. A concentration of households that live in such circumstances is expected to intensify problems. Figure 1 gives an overview of the problems discussed in this section. The problems can be divided into three categories: (1) problems related to the housing stock, (2) problems related to management, and (3) problems related to residents.

Figure 1 Categories of problems within post-WWII large housing estates



In addition to these problems, in many of these areas a number of positive elements can be detected as well. For example, many people are positive about the design of the estates with its large green public spaces. The separation of functions is sometimes also considered to be an advantage as it provides safe traffic handling and it prevents pollution from industries. Furthermore, the estates provide relatively large, bright and sunny dwellings for a good price and clearly serve an important function for those at the bottom of the housing market. Some of the estates have many chances because of their location close to the city centre or near natural areas. Others have become new centres of businesses because of good accessibility and available building space (Dekker and Van Kempen, 2005).

Having discussed some general characteristics of and changes within post-WWII large housing estates, we will now turn to our main questions: To what extent can models and theories on explaining neighbourhood change, and decay in particular, be applied to post-WWII large housing estates in European cities? And how can the useful elements of these models and theories be combined to explain the development of European post-WWII housing estates?

3 Traditional approaches

The concept of neighbourhood change has been investigated from different perspectives. Three major approaches can be distinguished. First, the *human ecology approach* focuses on economic competition for urban locations among various social groups. The inevitable filtering down of neighbourhoods with an ageing housing supply is a central notion in this approach. Secondly, the *subcultural approach* provides explanations for neighbourhood stability despite the working of economic forces. In doing so, subculturalists focus for example on the importance of strong neighbourhood attachment. In the third approach, *political economy*, the impact of larger economic and social transformations on neighbourhoods is explained. To explain the developments in European post-WWII large housing estates, we will look for the most useful elements of these three approaches.

Human ecology approach

Already in the first decades of the 20th century models were developed to explain neighbourhood change. Human ecologists made these models. Within the human ecology approach, which has its origins in the Chicago School of Sociology, it was assumed that neighbourhoods will inescapably be confronted with downgrading because of an ageing housing supply. Founders of this movement like Ernest Burgess (1925), Robert Park (1925), Roderick McKenzie (1925) and Homer Hoyt (1933), presented neighbourhood change as a consequence of a natural deterministic process based on rational economic choice.

Apparently, human ecologists focus on economic competition for urban locations among various social groups. In this framework, Burgess (1925) was the first who developed a model to explain neighbourhood change in the United States. As a principal researcher within the Chicago School he saw the development of neighbourhoods as part of a natural deterministic process. In his model, neighbourhood change was the result of *invasion and succession*; one population group or function can occupy an area (invasion) and then take the place of the sitting group of residents or function (succession). He assumed that the central location of a city is the most valuable because of its accessibility. Because of their competitive power, businesses and industrial enterprises occupy this most favourable location, so that it becomes a major employment centre within the city. It is assumed that low-income households prefer to be close to the place where they work, while the rich prefer to be close to the natural environment. Therefore, Burgess saw the city developing through a competition for space to produce concentric zones; the zones increased in socio-economic status and decreased in density with distance from the city centre.

Related to the work of Burgess and based on the economic analysis of residential location, William Alonso developed the *bid-rent theory*. In this approach, proximity and costs are central features. According to Alonso (1972), a consumer seeks to balance the cost of commuting against the advantages of less residential costs (see also Muth, 1969, referred to in Temkin and Rohe, 1996). Since low-income households are considered to consume less land they will tend towards living in central locations on expensive land. Density is thus higher towards the central location. Consequently, in the bid-rent theory, neighbourhood change results from economical individual decisions.

In 1933, Hoyt developed his sector-model within the human ecology approach, based on *filtering theory*.¹ The ideas behind his work were clearly based on Burgess' model, but unlike other followers of the Chicago School, Hoyt relates a households' move not directly to its income. In his view, a combination of unfavourable conditions in the city centre and the pull of new housing and new facilities in outlying areas, leads to migration. Hoyt sees the will of homeowners to invest in their properties as an important cause of neighbourhood change and decay. It is expected that this will decrease during the years because of an aging housing stock. As a result, the quality of the housing stock decreases so that newer dwellings in the periphery become more attractive. Unlike Burgess, who relates the move from the central zones to the suburbs to the unattractiveness of the centre (push), Hoyt relates this process to the attraction of the suburbs (pull).

Finally, *border or tipping models* should be mentioned when discussing the human ecology approach of neighbourhood change. These models contain elements of invasion/succession theory. The out-migration by middle-income families to more modern homes on the fringes of a city is the result of the in-migration of low-income families or households of a different racial group. Likewise, it is expected that in-migration will be more

¹ The filtering-down housing model suggests that housing and neighbourhoods inevitably filter from higher-status to lower-status populations. It can be seen as a chain of residential moves initiated by the construction of new homes for high-income households. This creates the filtering of households up the housing scale and consequently the filtering of dwellings (that is, estates) down the social scale.

and more characterized by families with a lower socio-economic status; racial or socio-economic transition of a neighbourhood therefore has an impact on the decision-making of sitting residents and consequently on the neighbourhood (Temkin and Rohe, 1996; Pitkin, 2001). Out-migration can be seen as a 'panic move'. This migration process may have further consequences, such as a decline in the value of the housing stock, which then can cause a further influx of low-income families. When this process starts, it can develop a momentum of its own; landlords as well as owner-occupiers may start to withhold needed repairs so that the neighbourhood starts to get less attractive to middle-income families to move in. It is expected that in the end it will lead to widespread abandonment (Birch, 1971). Apparently, not just the ageing housing stock causes decreases in investments, changes in the population composition are of influence as well.

Present value of the human ecology approach

The human ecology approach has, in all its variants, been criticized for a number of aspects (see, e.g., Van Kempen, 2002). The main weakness of the theory is its lack of specificity regarding the main causes of neighbourhood decline. It assumes complete economic rationality among all the actors in the housing market (e.g., Varady, 1986; Wirth, 1944, Firey, 1947, Jones, 1960). Neighbourhood change is described as a natural process that inevitably results in decay (e.g., Temkin and Rohe, 1996). Human ecologists often analysed the city as a separate entity and were less concerned with the city as a reflection and manifestation of the wider society (see, e.g., Yuen, 1979; Bassett and Short, 1980). Also, the approach failed to acknowledge cultural forces; as they consider neighbourhood change to be a natural process, there is little room for human agency (see, e.g., Yuen, 1979). Finally, the ideas of the Chicago School are criticised for being essentially American; they were developed in a specific time period and under a specific system: the free market economy in which terms such as social security and housing subsidies were not common and the role of the state in general was marginal (Van Kempen, 2002). Therefore, the theory can't just be applied to western European countries that are characterized by a welfare state.

Still, however, we do believe that this approach has a number of useful elements for the explanation of the developments in post-WWII estates. Invasion and succession as well as filtering theory can be seen as major concepts. It turns out for example that many post-WWII large housing estates are indeed confronted with a departure of high-income households, which are replaced by lower income households (succession). On the one hand, these households leave because of changing neighbourhood conditions. In many cases this is related to an influx of low-income households in general and poor ethnic minority families in particular (invasion) (see, e.g., Chignier-Riboulon et al., 2003 for a description of the situation in Lyon, France; Knorr-Siedow and Droste, 2003 for a description of the situation in Berlin, Germany). On the other hand, people leave because of attractive (newly built) dwellings elsewhere (filtering). Although many large housing estates were realized in the 1960s, and the housing stock is therefore not that old yet, competition from new building areas is considered to be a problem in these estates (see, e.g., Aalbers et al., 2003, for a description of the situation in Amsterdam and Utrecht, the Netherlands).

Subcultural approach

The subcultural approach, which was developed in the 1930s, is a reaction to the ecological models of neighbourhood change. Followers of this approach criticized several assumptions of the human ecologists, for example, the economic determinism of these models. Firey (1947) argues that the main motives of households to move from or to a neighbourhood may not be purely economic; the place where one lives can evoke sentimental and symbolic ties that bind an individual to a neighbourhood. Also, Ahlbrandt and Brophy (1975) are much more aware of the complex nature of neighbourhood change than most human ecologists are.

They identify several variables that affect the housing demand of a neighbourhood: economic, social, psychological and demographic aspects of the area. According to them, social and attitudinal indicators are useful in interpreting the reasons for changes in the economic indicators.

According to researchers within the subcultural approach, neighbourhoods do not follow the same trajectory through time and are therefore not doomed to deteriorate (Temkin and Rohe, 1996). Several issues are considered to be of influence here: resident confidence, satisfaction, commitment and social network. In this respect, subculturalists suppose that residents' attachment to their neighbourhood and their will to work on improving the area are important determinants of neighbourhood change or stabilization (Ahlbrandt and Cunningham, 1979). A breakdown of the social relationships can then be seen as the basic cause of neighbourhood decline; decreased homogeneity leads to a weakening of social bonds so that the foundation for a stable neighbourhood disappears, and people may become more interested (or even feel forced) to move (Varady, 1986; Clark 1992). This can also be turned around: residents can try to stabilize the social situation in their neighbourhood in order to prevent different forms of decay. This can be done by (officially or illegally) impeding people of a different background to move into the area. As a result, an area may not be available for certain groups (Kolodny, 1983).

Present value of the subcultural approach

Two major elements of the subcultural approach can be mentioned for explaining the developments within large post-WWII housing estates. The first is that a change of the character of the neighbourhood may very well start with a breakdown of existing social relationships within that particular area. This idea can be seen as a predecessor of today's attention for social cohesion in a neighbourhood (see, e.g., Kearns and Forrest, 2000; Forrest and Kearns, 2001; Dekker and Bolt, forthcoming; Van Beckhoven and Van Kempen, forthcoming). In an individualising society, a certain degree of social cohesion on neighbourhood level points out to be crucial for the liveability in that particular area. In many large housing estates it can be seen that the social structure has changed and residents live along each other instead of with each other. Caution is needed however, as the negative effects of social cohesion should be taken into account as well. When social cohesion in an area is too strong for example, it can hinder residents from participating in the rest of society (see, e.g., Granovetter, 1973).

The second element that is useful is the idea that residents are able to influence the situation in a neighbourhood themselves, for example by their willingness to remain in their neighbourhood, to do activities within the area (such as bringing children to schools within the area), and to work on improving the area, for example by taking a seat in a tenants' committee or a neighbourhood group. From different studies it has become clear that these active citizens can indeed be crucial for the quality of a neighbourhood (see, e.g., Forrest and Kearns, 2001). If people are no longer interested in their neighbourhood, the social structure may deteriorate very rapidly and the area may be confronted with change and in the end with decay.

Apparently, subculturalists clearly do not see neighbourhood change as an inevitable process and state that it can be prevented by the strength of social networks within neighbourhoods. However, the influence of the physical environment (e.g. the quality of the housing stock) should not be forgotten; a strong social network cannot prevent the housing stock from ageing. Also, subculturalists do not reckon with the impact of changes that take place outside the neighbourhood (macro factors). An approach where this impact is in fact central, is discussed next.

Political economy approach

The political economy approach explains the impact of larger economic and social transformations on neighbourhoods. Two different levels of analysis can be distinguished: national and local. First, neighbourhood change can result from developments on the national level. Within the *institutional approach*, the role of the state is seen as one of the major factors to explain patterns of urban development (and likewise neighbourhood change). The retreat, or changing character, of the European welfare state is a major topic for many researchers in this respect. A crucial consequence of a retreating welfare state for example, can be the risk for declining incomes of those who do not work (elderly, handicapped people, unemployed, people on welfare). As a result, these state-dependent low-income households run the risk to end up in those areas where dwellings are affordable (e.g. because they have a very low rent). These areas may then be confronted with changes in the socio-economic composition of the population.

Another consequence of the retreat of the welfare state is related to the quantity, quality, location, and allocation of the housing stock. Austerity programmes for example, may lead to lower subsidies for housing. As a consequence, fewer affordable dwellings may be built or less maintenance will be done on the existing stock; neighbourhood decay may be the result (Van Kempen, 2002). Like Rex and Moore (1967) stated with their *neo-Weberian approach* in housing research, (desirable) housing is a scarce resource and different groups are differently placed with regard to access to these dwellings ('housing classes'). It is even stated that people are distinguished from each other by their strength on the housing market (Rex, 1968). This strength is highly influenced by different resources of households. Several resources can be identified (see, e.g., Van Kempen and Özüekren, 1998). It points out from the description above that human ecologists value economic resources most; a household's income determines its opportunities. Subculturalists on the other hand focus on social resources (e.g., neighbourhood attachment), while in the eyes of political economists, political resources are important. These resources reflect the possibilities of attaining and defending formal rights in society. Formal rights may hinder or enable people in their efforts of achieving important goals in life (Van Kempen and Özüekren, 1998: 1642). The welfare state (that is the retreat of the welfare state) has an influencing role here; for many low-income households, the welfare state determines to a large extent how several resources are divided. This holds particularly for social and political resources.

Secondly, in addition to developments on the national level, issues on the local level are considered to be of influence on the situation within a particular estate. It is stated for example that urban areas are used by powerful elites to facilitate capital accumulation. In this framework, Molotch (1976) focuses on the influence of so-called 'growth machines': coalitions of urban elites who seek to capture and retain economic power primarily by promoting real estate and population growth. According to political economists urban development and likewise neighbourhood change or stability, is driven by actions of these urban elites instead of by an ecological process or the activities of actual residents (Palm, 1985, Squires and Velez, 1987). Institutions working in real estate (banks or realtors) are often considered to be responsible for steering certain people to certain neighbourhoods – especially along racial lines – in order to meet the interests of the growth machine.

In addition, private and public institutions are seen as the guilty party in neighbourhood decline; they are held responsible for 'blockbusting', 'redlining' or for example poorly designed housing subsidy programmes (Varady, 1986). This crucial role of these and other 'managers' (also referred to as gatekeepers) is elaborated in the *managerial approach* of Pahl (1975, 1977) and by the work of Lipsky (1980); at the local level, local government or housing associations might decide to allocate a dwellings to a certain household in one neighbourhood rather than in another. The principal idea of this approach is that "normal" individuals or households do not have a decisive power. This means that

neighbourhood change is not something that emerges from ideas and acts of inhabitants, but find their origin in concrete (or sometimes more vague) actions elsewhere.

Present value of the political economy approach

The political economy approach contains several useful elements for explaining neighbourhood change and for explaining the developments that have taken place in post-WWII large housing estates in particular. First of all, unlike the approaches that have been discussed above, the political economy approach refers to the role of the welfare state. Amongst others a retreat of this welfare state can have an impact on the income level of certain households. As the housing stock in many post-WWII housing estates consists of social rented dwellings, low-income households can be 'pushed into' these estates. This in turn can have an enormous impact on the situation within those particular neighbourhoods. Moreover, the welfare state can have a direct influence on the character of the housing market (i.e. composition of the housing stock). For low-income households it is for example rather crucial if they can rely on a large social or public rented sector, such as in the Netherlands and Sweden, or not (as for example in Belgium).

At the same time, political economists refer to the influence of an urban elite, gatekeepers or urban managers; urban development and likewise neighbourhood change or stability, is not driven by some kind of ecological process or by activities and attitudes of the actual residents, but often determined by actions of local elites. In the case of the estates that are central in this paper, particularly the role of all kinds of managers is of influence. For example, by allocation rules (gatekeeping) or by redlining, they can cause particular neighbourhoods to become concentration areas for certain population groups. At the same time, in many large housing estates managers are responsible for maintenance of the housing stock as well as the living environment. Their behaviour on these points can affect the situation in an estate (see, e.g., Aalbers et al., 2003, 2004 for a description of the situation in Amsterdam and Utrecht). This focus on the role of urban elites, is mentioned as a critique as well. Pitkin (2001) states for example that the political economy approach focuses too much on the impact of institutions and therefore on external influences; the influence of internal factors, like residents themselves is somewhat forgotten.

4 Models of neighbourhood decay

In addition to the previous section, we will now focus on several comprehensive models, in which neighbourhood change is explained. In our eyes, the models that we use are the most suitable for collecting useful elements to explain the developments in European post-WWII large housing estates. The main points of each model will be briefly discussed. Also, the models are linked to the traditional approaches that were discussed in the previous section and simultaneously to the developments within large post-WWII estates. First we focus on two models that are based on the American situation. Then three European models are discussed.

4.1 Models based on the American situation

William Grigsby and colleagues (1987): the influence of social and economic changes

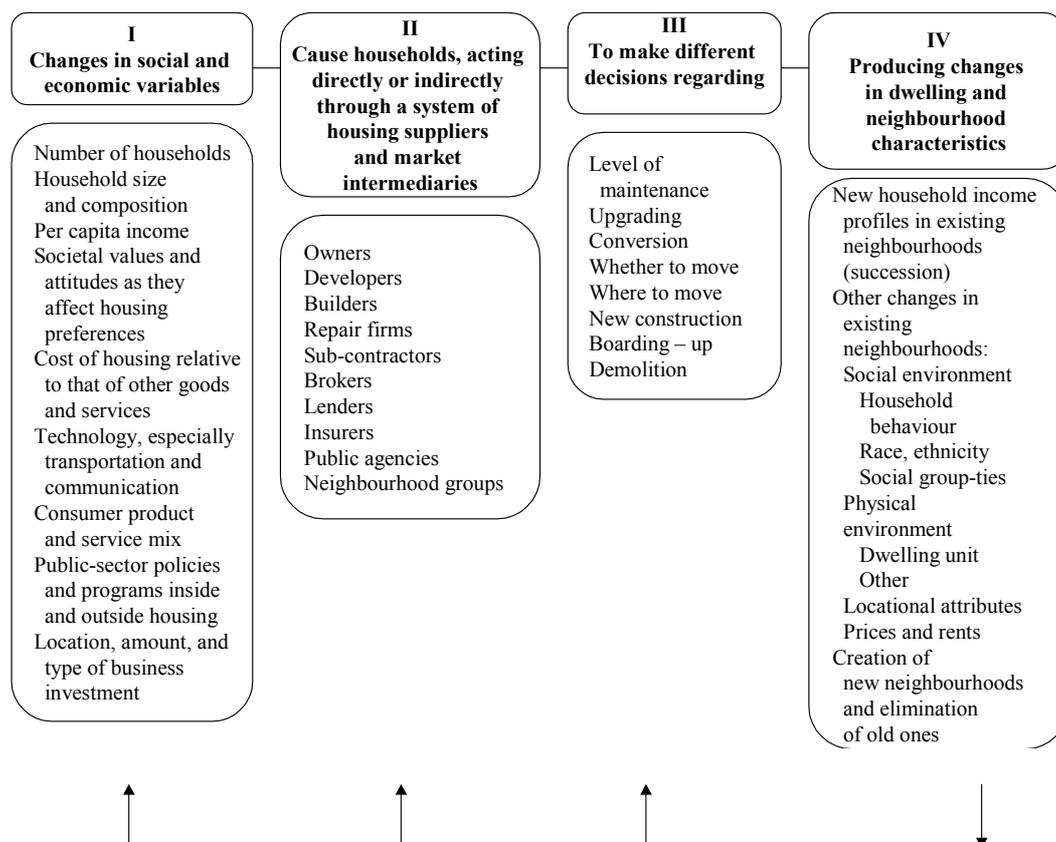
William Grigsby and his colleagues have criticized the widely expected belief that the ageing of the housing stock is the primary cause of neighbourhood decline. According to them, the lifespan of areas can be postponed endlessly (Grigsby et al., 1987; Megbolugbe et al., 1996). Furthermore, like human ecologists, Grigsby and co-authors assume that succession is a constant factor in urban growth and likewise in neighbourhood change. They define neighbourhood succession as: "*a shift in the income profile of occupants of a geographically*

defined neighbourhood of dwelling units” (Grigsby et al., 1987: 27). Related to this, they see physical deterioration as a consequence rather than a cause of population succession. In their view, “*given the existence of needy households who are spatially concentrated, physically deteriorating neighbourhoods are inevitable*” (Grigsby et al., 1987: 58).

To demonstrate how this all works, Grigsby and colleagues have aimed to capture the process of neighbourhood change in an all-embracing model in which several variables involved in neighbourhood succession are linked (see figure 2). They depart from the thought that an urban housing market consists of submarkets in which social and economic features are differently influenced by factors that are exogenous as well as endogenous to the neighbourhood. Depending on the specific character of an area, exogenous factors, or macro forces, can affect neighbourhoods in different ways.

According to the model, neighbourhood change starts with changes in social and/or economic variables, such as the number of households or the relative cost of housing (Panel I). These macro-factors cause households, who act directly or indirectly through a system of housing suppliers and market intermediaries (Panel II), to make different maintenance and moving decisions (Panel III), which alters the characteristics of dwellings as well as neighbourhoods (Panel IV). These alterations may in turn feed back to one or more of the independent variables in Panel I, intermediate variables in Panel II, or household decisions in Panel III. This may cause new changes (Grigsby et al., 1987: 33).

Figure 2 *Grigsby’s model of neighbourhood change*



Source: Grigsby et al., 1987

Apparently, Grigsby and colleagues consider powers behind neighbourhood change to be impersonal; exogenous factors, such as demographic changes, economic changes, and governmental interventions are all believed to be of influence on the situation within a

neighbourhood. Furthermore, they see obsolescence of dwellings, the site or the location as an influencing factor as well.²

In addition to exogenous factors, Grigsby and colleagues pay attention to the impact of endogenous factors. Although these factors seldom initiate a change, they may reinforce the direction of change generated by the operation of exogenous forces. First they mention behavioural factors: it is expected that once a critical mass of individuals with behavioural problems has been reached, the social fabric of a neighbourhood unravels, and the residential, educational, and employment environment is destroyed (Downs, 1973, cited in Grigsby et al., 1987). Secondly, the level of maintenance of the housing stock is mentioned: as one dwelling is deteriorating faster than another dwelling, owners of the non-deteriorating dwellings are less eager to invest in their properties (they expect prices to decrease because of the deterioration of a single dwelling).

Present value of the work of William Grigsby and colleagues

The work of Grigsby and colleagues shows some similarities with the approaches that have been discussed in the previous section. First, like human ecologists, attention is paid to the impact of succession; in their view, at least some neighbourhoods will be confronted with change because low-income households follow more well-to-do households moving from one area to another (Grigsby et al., 1987: 57). Furthermore, their reference to the role of institutions (see Panel I and II) can be seen as a similarity with the political economy approach; national policies influence both the demand for and supply of housing (Grigsby et al., 1987: 39).

Their work has been criticized as well. This holds for example for the assumption that the lifespan of areas can be postponed infinitely (Megbolugbe et al., 1996). Another point of critique to the work of Grigsby and colleagues is related to the fact that powers behind neighbourhood change are impersonal; although, for future developments of metropolitan areas they reckon with the influence of residents' attitudes towards fellow residents, they mention this social variable without considering its ability to influence the situation in a neighbourhood; they do not reckon with residents' potentials to develop successful strategies in order to continue stability within their neighbourhood or to resist changes (e.g. by formal collective action or by informal social behaviour). Apparently, Grigsby and colleagues consider residents to react on particular developments without being able to influence these changes. Finally, at first site it seems from the model that households themselves are a dominant actor in neighbourhood change (i.e. change is approached from a households' point of view). However, a close look at panel III in the model may suggest differently; for example decisions about new construction or demolition are in most cases made by other actors.

We think however, that their work contains several useful elements. First, the concept of neighbourhood change is approached from a broad view. It is expected amongst others that public policy, changes in real incomes and/or in the size or number of households may have an effect on neighbourhoods. Secondly, Grigsby and colleagues emphasize the concentration of poverty. This is relevant for the situation in large housing estates; many of these areas that have been confronted with problems are characterized by a concentration of a socio-economic weak neighbourhood population. However, it is to be questioned whether these problems are a direct cause of this concentration; not every area with an over representation of low-income

² Instead of an ageing housing stock, Grigsby et al. use the term obsolescence for describing the relative decline of housing estates: "Although estates may remain in good conditions in all essential respects, they either gradually suffer over time as new neighbourhoods are added to the community or they fall victim to a shift of consumers' preferences away from housing and toward other goods and services, such as vacations, boats, and cars. In either case, they experience obsolescence, a condition often equated with, but different from, deterioration" (Grigsby et al., 1987: 38).

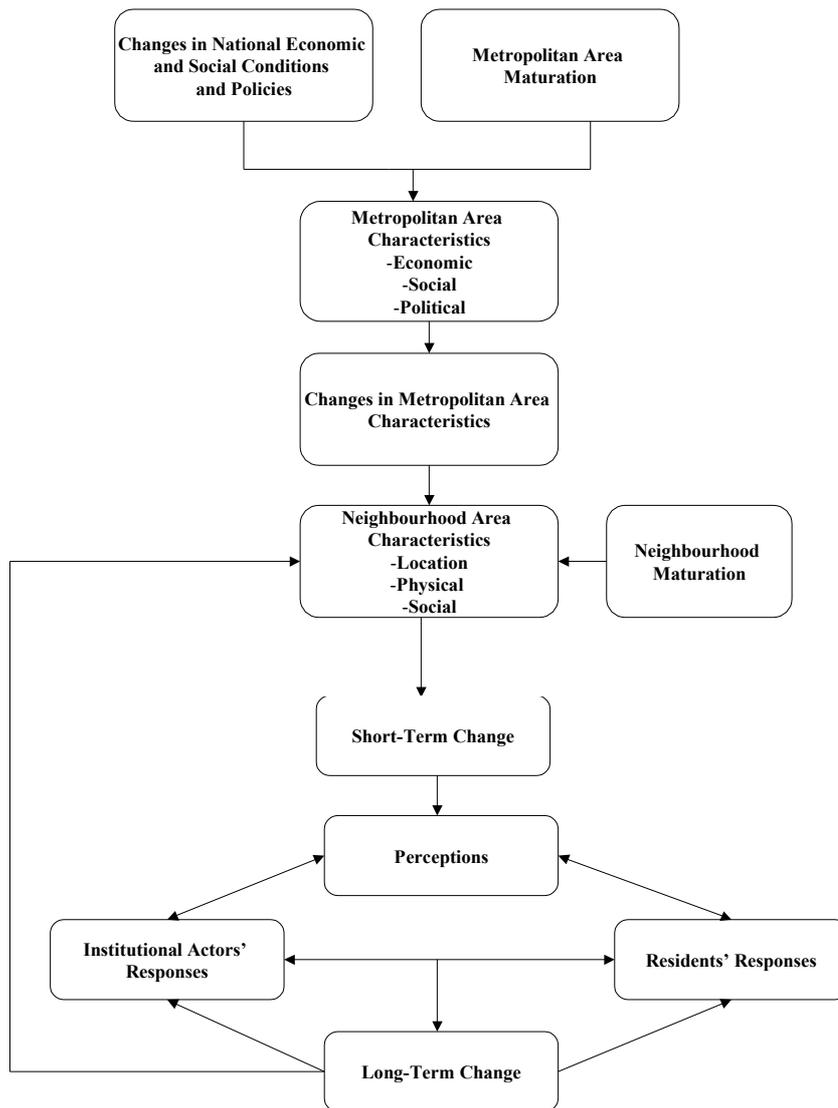
households is problematic; probably due to the fact that the theory has been developed in the United States, decay is related to income very easily (see, e.g., Van Kempen, 2002).

Kenneth Temkin and William Rohe (1996): the importance of the social fabric

In 1996, Kenneth Temkin and William Rohe developed a model to explain neighbourhood change (see figure 3). Like Grigsby and colleagues, they analyse neighbourhood change from a multi-disciplinary perspective. According to their model, two forces are particularly responsible for neighbourhood change. First they mention changes in national economic, social and political conditions. The loss of manufacturing jobs or the influx of ethnic minorities may alter for example a region's employment base or social structure. Secondly, the maturation of a metropolitan area as well as of the neighbourhood is mentioned; residents age, marry or die. Even without large-scale structural changes, neighbourhoods must therefore cope with internal changes.

In their model, the changes described above have an impact on metropolitan areas and likewise on the situation within particular neighbourhoods. The intensity of this impact on neighbourhood level depends however on locational, physical and social characteristics of an area. In the short run some changes in the social and physical situation may occur, like an increase in the share of ethnic minorities or a decrease in the number of shops. The way residents as well as institutions react to these changes then determine the direction in which a neighbourhood develops in the long run. For example, residents may decide to move or to organise instead, while institutions may try to resist to the change through increasing public investment (Temkin and Rohe, 1996: 166). The interaction between these actors is considered to be of great importance. Temkin and Rohe state that a strong social structure within an estate is crucial to resist to changes; estates with a strong social fabric are able to resist changes better than areas with a weak social fabric. A resident organization (i.e. an element of the social fabric in an estate) can react for example on the actions of institutional actors in trying to change them. In the researchers' view, neighbourhood stability requires a dedicated group of residents who successfully express their feelings to the actors in control (i.e. the ones who are responsible for changes or stability in an area). This depends however on their attitude and their collective political power. Consequently, areas with similar physical characteristics may follow different trajectories because of differences in the social structure. Temkin and Rohe state that they see neighbourhood change as a kind of dialogue: large urban changes are replaced to neighbourhoods amongst others by interactions between residents and larger social forces.

Figure 3 *Temkin and Rohe's model of neighbourhood change*



Source: Temkin and Rohe, 1996

Present value of the work of Kenneth Temkin and William Rohe

The model of Temkin and Rohe contains elements of the subcultural approach (e.g., neighbourhood attachment and social interactions) as well as of the political economy approach (e.g., focus on the influence of large structural changes). Of this approach, Temkin and Rohe reject the idea however, that issues always end in favour of the urban growth machine (Temkin and Rohe, 1996: 166). Most striking however, is the distinction with the human ecology; aspects such as the age of the housing stock or the location of a neighbourhood are inferior to social relations (within neighbourhoods as well as between residents and institutions).

Probably, Temkin and Rohe themselves have made the most critical remarks about their work. Although the model emphasizes the importance of social relations within estates as well as the relations between estates and institutions, they state that too little attention is given to the impact of physical characteristics of an area (e.g. the quality of the housing stock or the location of an area).

We think the model is important however. It shows the significance of a social fabric within an area. Although subculturalists pay attention to the influence residents can have, Temkin and Rohe emphasize this impact and relate it to the role of institutional actors. According to them, the social fabric within an area is necessary to combat or enforce changes. This depends however, on the residents' attitude and their collective political power; residents need to be willing and able to influence higher political, financial and other institutional actors whose decisions may cause changes. When relating this to the developments in post-WWII large housing estates, it can be said that in certain areas residents have been able to enforce changes and improvements (see Pareja Eastaway et al., 2004 for a description of the situation in Spain). In other areas however, residents did not have this power (see Belmessous et al., 2004 for a description of the situation in France).

4.2 Models based on the European situation

Niels Prak and Hugo Priemus (1986): spirals of decline

Niels Prak and Hugo Priemus can be seen as the first researchers who focussed on the situation in post-WWII social housing estates in Europe and in the Netherlands in particular. In 1986, they developed a model, which was based on the idea that the decay of such neighbourhoods was the result of three fortifying spirals of decline: social decline, economic decline, and technical decline. A few years later, some adaptations were made to the model (Onderzoeksinstituut OTB, 1989) (see figure 4). Again in 1993, Heeger – at that time a PhD student of Priemus - renewed their model. Among others, he added aspects of urban design (e.g. location, living environment, level of services), and reputation/image.

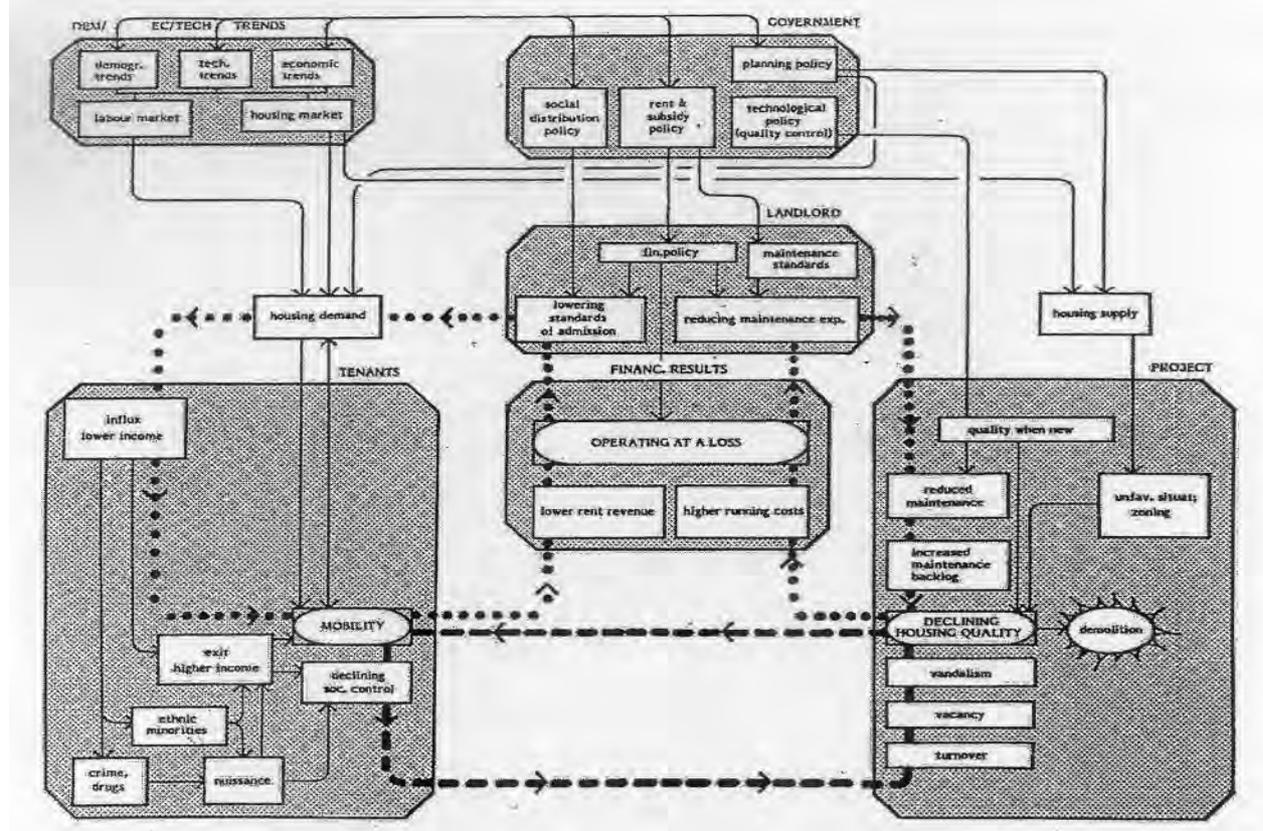
The first spiral of decline, *social decline*, concerns the tenants and more specifically, changes that take place within the tenant population (left part of the model). When the attraction of an estate decreases and mobility increases, the number of low-income households in these particular areas will rise. In some cases this may lead to the departure of more and more high-income households. As a result social control may diminish, vandalism and crime get the chance to expand and the attractiveness of the area may decrease further.

The increasing mobility of residents causes faster turnover rates, which in turn can lead to vacancies, vandalism, pollution and low tenant participation. These developments may result in *technical decline* (lower spiral in the model). A declining housing quality, as shown in the model can again lead to further mobility. The point of departure of the housing stock (i.e. the initial quality) is of importance as well; sometimes it seems difficult to maintain a particular housing block because of its bad general quality. In this case, decay is the result of higher powers instead of unwillingness of the owner to invest in its property.

Both social and technical decay have an impact on the operational costs of the landlord; income from rent decreases because of increasing mobility and the influx of more and more low-income households. At the same time, higher turnover rates, problems with tenants, increasing maintenance, and for example landlords' attempts to ensure that the complex remains competitive, result in higher running costs. In the model this is described as the third spiral of decline: *economic decline* (right spiral in the model). A landlord may react to this unfavourable situation by loosening the allocation rules for its properties. Also, they can decide to invest less in maintenance. In the first case, an increasing influx of socio-economic weak households may be the result, while the second 'solution' may cause further decrease of the quality of the housing stock.

Furthermore, elements of management, developments in the urban housing market, national policy, and demographic, economic and technological developments are of influence on neighbourhood decay.

Figure 4 *Prak and Priemus' model of neighbourhood change*



Source: OTB, 1989

Present value of the work of Niels Prak and Hugo Priemus

As Prak and Priemus focused on the situation in post-WWII social housing estates in Europe and in the Netherlands in particular, it is no surprise that their model can very well be applied to the developments within these areas. Also, their model shows similarities with the traditional approaches. For example their focus on the breakdown of the social structure within an area is related to the subcultural approach, while the attention for the role of landlords derives from the political economy approach. In addition to these similarities, Prak and Priemus added also some new elements.

First, it has become clear that the initial quality of the housing stock can be a forceful determinant of its later situation, physically as well as socially. No matter what you do, if the initial quality is low, deterioration may start quickly and continue rapidly. It is a well-known fact that post-WWII housing estates have not always been built to very high standards. This is related to the fact that building in large quantities was more important than building high-quality dwellings, especially in the early post-WWII period, when housing shortages were high. An example where the result of bad construction became sadly visible was at Ronan Point in London. The flat building that had been realized in 1968 and partly collapsed already in the same year due to a gas explosion (see, e.g., Woolley, 1985).

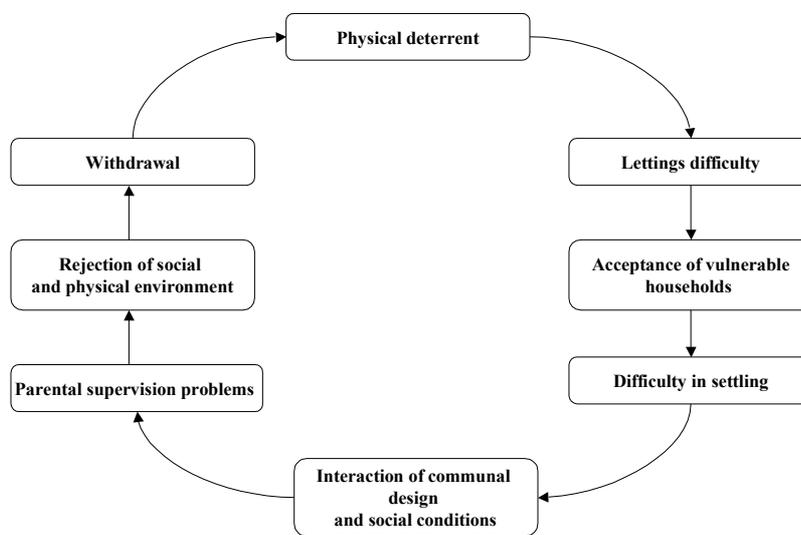
Furthermore, unlike other theories and models that have been discussed in this paper, Prak and Priemus were one of the first who focussed particularly on estates with an over representation of social rented dwellings. Such a situation, often the case in post-WWII large housing, was expected to be of influence on the social situation as well as on the level of maintenance in such areas. Many other housing researchers have elaborated on this idea. They have time and again asserted that owner-occupiers are in general more inclined to put

investments in their dwellings and neighbourhood, financially as well as socially. The fear of declining house values can be seen as an important determinant of this tendency (see, e.g., Forrest and Kearns, 2001; Atkinson and Kintrea, 2000).

Anne Power (1997): the importance of management and the living environment

Like Prak and Priemus, and to some extent related to the work of Grigsby and colleagues, Anne Power has focussed on the changes that have taken place in post-WWII large housing estates in various European countries. According to Power, these areas were considered to be the solution for more than just the housing shortage; it was a form of social engineering to address housing and social problems within an area (Power, 1997). It worked out differently however. In her work, the influence of the physical design in an area is strongly related to the unfavourable situation that has occurred in many of these areas.

Figure 5 *Vicious circle of design, lettings and social difficulties*



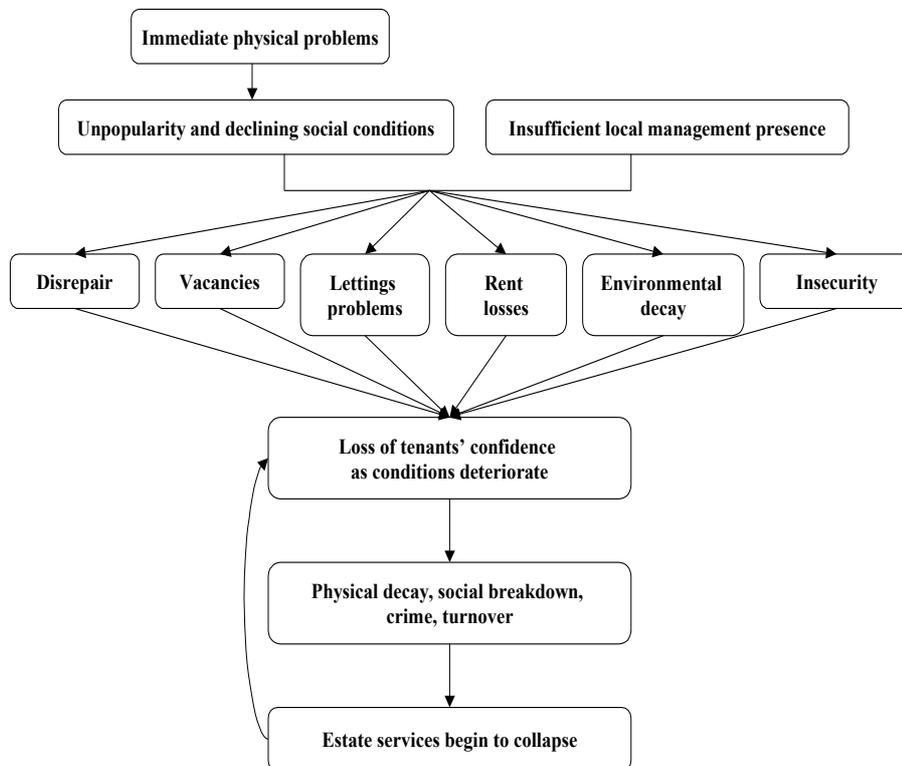
Source: Power, 1997

Figure 5 shows the interaction between the physical and the social situation within an area; physical conditions are considered to fuel social problems. For example physical deterrence (e.g., due to the housing stock) may cause difficulties with letting. This in turn can result in the acceptance of more vulnerable households, in order to avoid vacancies. A concentration of these kinds of households may make social problems more complex. This is related amongst others to the interaction of communal design and social conditions of large housing estates. Power illustrates this with the difficulties with which lone parents can be confronted. A mother with a young child in a high-rise flat on an unpopular estate can have great difficulty in creating a secure social environment; the design of the areas, with many unanimous public places may cause a decrease in social control and may result in a situation in which the social and physical environment are confronted with decay. Simultaneously, a poorly maintained public space is expected to affect their level of pride for the estate. As a result, the mother and her child may reject the social as well as the physical environment, and may withdraw or move (Power, 1997: 101-102).

Related to this process, Power focuses on the importance of management; the demand of dwellings, the composition of the neighbourhood population, the image of an area, as well as the physical design of an estate affect issues regarding management and repair. Particularly situations in which social and/or physical problems occur require complex management capabilities (see figure 6): when landlords manage their estates from a distance (instead of from the estate itself), vital decisions may not be taken in time, and complex problems may

not be tackled. In many large housing estates for example, public space is often shared by all residents and is a direct management responsibility. When management fails, these spaces are not taken care of and may be used not in the way they should. Decay can be the result and usage may decline further (e.g. criminal activities may develop).

Figure 6 *The importance of management*



Source: Power, 1997

Finally, Power pays attention to reversing the processes of decline. To do so, she focuses on the most important actors in the ‘rescue process’: landlords, government (both national and local) and, residents. She states that the key to reversing the spiral of decline is winning the support of residents. Unlike other researchers, who often pay some attention to reversing the process of decay, Power shows it in a model. In this respect, local management for example turns out to be an important factor in reversing the process of decline as described in figure 6. Amongst others, they can consult residents about priorities for changes and improvements. Also, increased caretaking, improving the estate’s appearances or supporting tenant initiatives, can stimulate social networks to develop again and can therefore be a trigger for improvements as well (Power, 1997). Therefore, Power considers addressing social needs as important as attacking physical and management problems. Related to this, she stresses that authorities (e.g. landlords) have to be close to the place where everything happens (i.e. acting on the spot).

Present value of the work of Anne Power

As is the case with the model of Prak and Priemus, it is no surprise that the work of Power can very well be applied to the developments within post-WWII large housing estates; after all, these areas are central in her work.

Compared to the traditional approaches, to some extent, the work of Power shows similarities with the political economy approach; despite the fact that the role of macro-factors

is missing in her work, she stresses the impact of management; the presence of housing managers and the way they act can make a crucial difference for the present and future situation of large housing estates.

Furthermore, Power considers the living environment to be an important indicator of neighbourhood change. Unlike many other researchers, who see physical decay as a consequence, rather than a cause of neighbourhood change, Power considers the living environment to be of great importance. This element includes aspects regarding public space as well as the housing stock. With respect to the first aspect it can be said that the design and organization of public space in a residential environment has enormous impact on the image that the neighbourhood projects to both its residents and those outside it. Well-planned, well-organized and well-maintained public spaces play a vital role on the development of a good residential environment and may contribute to the creation of a sense of neighbourhood or community cohesiveness for the residents. In many post-WWII large housing estates the issue of public space points out to cause problems. Most often this is related to vague agreements about maintenance responsibility (see, e.g., Aalbers et al., 2003 for a description of the developments in Amsterdam and Utrecht; Hall et al., 2003 for a description of the situation in London and Birmingham; Černič Mali et al., 2003 for a description of the situation in Ljubljana and Koper).

In addition to public space, the housing stock is another aspect of the living environment that affects the situation in large housing estates. This holds in particular for the composition and quality of the stock. The fact that residents have to share many facilities, like elevators, staircases and garbage collecting points, puts the level of residents' tolerance to the test and asks some adaptability. Also, the relative obsolescence of the housing stock can cause change; due to new building elsewhere, the stock can become less attractive and people with opportunities may start to leave (see, e.g., Aalbers et al., 2003 for a description of the developments in Amsterdam and Utrecht).

Hans Skifter Andersen (2003)

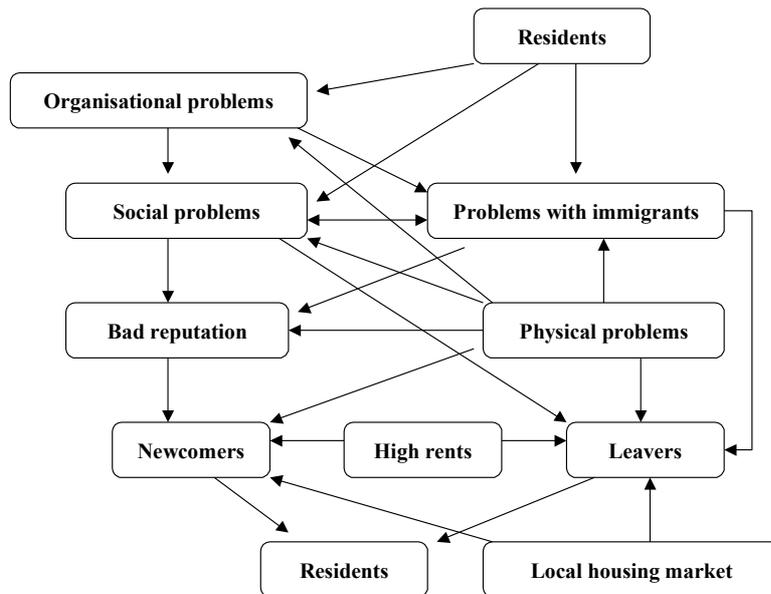
Finally, the work of Hans Skifter Andersen is discussed. Like Prak and Priemus and like Power, he too concentrates on post-WWII large housing estates in various European countries, and in Denmark in particular. The decay in these areas, which are characterized by an overrepresentation of dwellings in the social rented sector, is central in his work. To identify some of the central mechanisms that lead to decline, he developed and tested a model in which the expected relations between several internal and external issues within social housing estates are described. In his model (see figure 7), Skifter Andersen distinguishes between three elements. First, he classifies local housing market conditions, rent level, and physical appearance and amenities as *given circumstances*. Secondly, passivity and low engagement among residents, social and behavioural problems, problems connected with immigrants and a bad reputation, are *observed problems*. The third element, *residential changes*, consists of the initial composition of residents, the mobility rate of different groups, and the composition of new residents (Skifter Andersen, 2003: 108-109).

According to Skifter Andersen, neighbourhood decay is a 'self-perpetuating process'. When the composition of the neighbourhood population is distorted, social problems may increase. This may worsen the reputation of the estate in question, which in turn may have an effect on the composition of newcomers; newcomers with a job are expected to be less interested in the estate so that people without a paid job will enter the area and replace residents in employment. These developments may again cause changes and likewise social problems and a bad reputation may increase. A vicious circle is then established (Skifter Andersen, 2003: 123).

In addition, Skifter Andersen distinguishes between two processes of deprivation. On the one hand he mentions interior deprivation, which includes interaction between physical

decay and residents' norms for use of the area; spirals of social conflict in fragmented neighbourhoods; processes of conflict, crime, insecurity and withdrawal; internal and external stigmatization; reduced possibilities of social cohesion and participation in management, school problems and reduced private services. On the other hand, but simultaneously, an estate can be confronted with exterior deprivation: negative changes in the qualities and resources of neighbourhoods have a negative influence on the flow of capital and people in and out of the neighbourhood.

Figure 7 *Skifter Andersen's model of neighbourhood deprivation*



Source: Skifter Andersen, 2003

Present value of the work of Hans Skifter Andersen

Compared with the traditional approaches, the work of Skifter Andersen shows most similarities with the subcultural approach; the breakdown of the community is considered to have an enormous impact on the situation within an estate. Also, there are similarities with the work of Power (1997); like Power, he recognizes for example the importance of management and the influence of the living environment. A striking difference with the rest of the work that have been discussed in this paper is the influence Skifter Andersen ascribes to the presence of immigrants. Although other authors refer to this aspect to some extent, in the work of Skifter Andersen it has a central position; according to his work, a large amount of non-natives in an estate can cause a bad reputation, and determines to a large extent the composition of newcomers to an estate. From recent research it has become clear that this holds true for several large housing estates in Europe (see, e.g., Chignier-Riboulon et al., 2003 for a description of the situation in Lyon, France; Knorr-Siedow and Droste, 2003 for a description of the situation in Berlin, Germany).

Some points of critique can be made as well. The main thing is probably the fact that his model lacks a clear starting point; although the model includes a lot of useful elements, in our opinion its structure is a little confusing; it is not clear from the model for example, that it shows a dynamic process (i.e. vicious circle) instead of a static situation. Also, the influence of macro-factors is not taken into consideration; Skifter Andersen approaches the concept of neighbourhood change from a local perspective and does not reckon with developments that take place at a higher level (e.g., national level).

5 Conclusions

In this paper we discussed to what extent models and theories explaining neighbourhood change, and decay in particular, can be applied to European post-WWII large housing estates. To do so, we have looked for the most useful elements of these models and theories. Table 1 gives an overview of these elements. It can be seen that the model of Prak and Priemus contains most of the elements that are considered to be of influence on the situation in post-WWII large housing estates; although the model is rather old it turns out to be quite relevant for explaining the developments that have taken place in such areas.

Table 1 *Elements emphasized in theories and models about neighbourhood change and decay*

	Traditional approaches			Models of neighbourhood change				
	Human Ecology	Subcultural	Political Economy	Grigsby Et al.	Temkin & Rohe	Prak & Priemus	Power	Skifter Andersen
Endogenous / Micro factors								
Neighbourhood conditions				X		X	X	X
Role of managers			X	X	X	X		
Economic resource / income level	X		X	X		X		X
Social resource / neighbourhood attachment		X	X	X	X		X	X
Political resource / social capital			X		X			
(Initial) quality of the housing stock						X	X	
Built environment (e.g. building density)						X	X	X
Maintenance of environment							X	X
Maintenance of dwellings	X		X	X		X	X	
Ownership of dwellings						X		X
Quality and quantity of social facilities	X	X		X		X	X	X
Exogenous / Macro factors								
Economic changes				X	X	X		X
Position on the urban housing market (e.g. new building elsewhere)	X			X		X		X
Welfare state			X			X		
Reputation	X				X	X	X	X
Location	X			X		X		X

The comprehensiveness of the work of Prak and Priemus is also shown when relating it to the problems that have occurred in many large housing estates (see section 2). In one way or another most problems are included in their model; the spiral of technical decline covers problems related to the housing stock, the spiral of economic decline includes the second set of problems that is related to management, and finally, the spiral of social decline deals with problems related to residents.

From the above it seems that the model of Prak of Priemus is rather complete. However, some things are clearly missing. As mentioned above, the impact of public space is more or less missing in their model. This turns out to be an important issue in many large housing estates however. Power for example accredits a lot of influence to the quality of the public environment. Furthermore, table 1 shows that Prak and Priemus do not take the importance of a strong neighbourhood attachment into consideration; it is striking to see that the model of Prak and Priemus does not consist any factor that has been referred to by subculturalists. Apparently, Prak and Priemus have not or just a little accounted for the influence of endogenous factors. In their view, residents are not able to influence or stabilize the situation in a neighbourhood, for example by their willingness to remain in their neighbourhood and to work to improve it. Also the political power of residents is absent in their model. As emphasised by Temkin and Rohe, residents can influence the actors that are responsible for neighbourhood change (public and private institutions). To do so, a certain amount of power is needed however.

In addition, and related to the changing role of governments all over Europe, it is striking to see that the role of urban governance is not included in any of the works discussed in this paper. In Europe, (local) government has traditionally been the main actor in urban and estate-based projects. However, in the 1990s urban government encountered a movement leading towards more differentiated forms of governance. More sectors were becoming involved in governing activities and decision-making: local government became urban governance. Since some responsibilities have been transferred to the marketplace and the civil society, public matters are no longer the exclusive responsibility of the state (Kooiman, 1993). Following a first move to involve the private sector, the voluntary and community sectors have recently also been involved. At neighbourhood level, urban governance tries to seek new ways to be creative, to build strengths and to access and utilize resources, for example developing social capital as means by which local problems can be resolved (Kearns and Paddison, 2000). Apparently, cities have become complex, diverse entities and different people experience them in different ways. This observation is fundamental to the concept of collaborative planning (see, Healey, 1997, 1998a, 1998b, 2002). In this respect, the agenda for city planning should be inclusive; all stakeholders should have the right to have a voice in the decision-making process. Related to the theories and models discussed in this paper, it points out that unlike for example the political economists, who emphasize the invincible influence of the urban growth machine, the concept of governance can be seen as a way to contradict this institutional impact. As pointed out amongst others in the work of Temkin and Rohe, the significance of the interaction between residents and institutions increases, and can be considered an important aspect in neighbourhood change.

In short, the model of Prak and Priemus is most comprehensive for explaining the changes that have taken place in large housing estates. However, as some important elements are missing, it is not all-embracing. Several elements, amongst others from the work of Temkin and Rohe and Anne Power should be added to make it more complete. This holds for the impact of both the social structure/fabric and of public space. Also, the aspect of governance (e.g. the increasing influence of market parties) needs to be taken into account when explaining the developments within large housing estates.

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