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UND ANGEWANDTEN REGIONALFORSCHUNG

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Smart Growth - a concept for the urban future or just a tricky fraud?

Gerhard O. Braun

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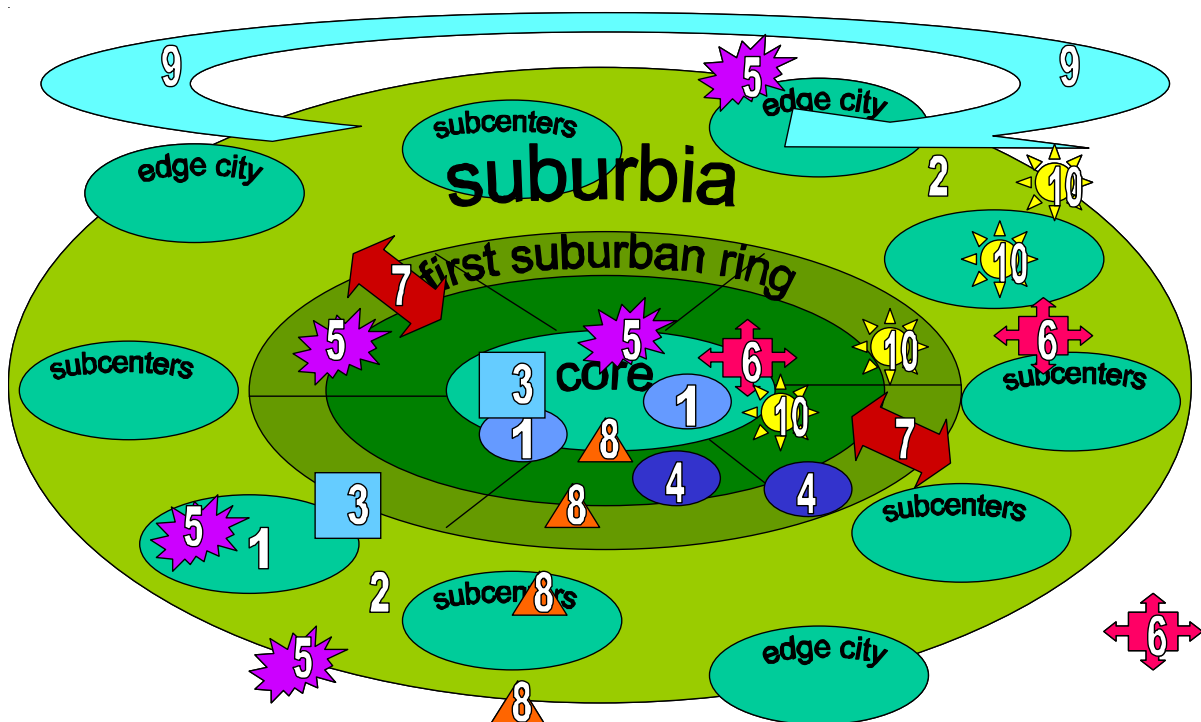
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1. Introduction: future problems of urban areas

Robert Fishman asked what will be the ten most probable influences on the American metropolis for the next 50 years answered the question 1995 in "Housing Facts and Findings" as following (fig. 1):

- (1) Growing disparities in income and wealth, that result in an extreme increase of the social polarisation and spatial fragmentation. Elites preserved in suburbs, edges and gentrified central city areas insulate themselves from the urban crisis, a home building industry which favours high-end houses, and a concentration of upscale malls and office parks near the elite enclaves contribute to the metropolitan divide. The underclass and the poor are spatially isolated in the downscaled central city and the first suburban ring. The spatial distribution of all kind of public infrastructure and private investment will follow that scheme.
- (2) "The suburbs rule" and "will continue to rule". The political majority lives in the suburbs. Already 1996 52.2% of the voters lived outside of the administrative urban core.
- (3) The city will have to change its design and structure arranged in the 20th century again since the baby-boomer of the years 1945 to 1964 form 30 % of the population. In 2030 the age group above 66 years form with today 11 % then 18 % and this group will be in combination with the new household structures full service dependent or will have these functions in walking distance. The model of the suburban single-family house will be replaced to a large extent by that of condominiums with integrated services for protection and supply or the empty nesters will leave the suburban neighbourhoods for urban apartments "where a full range of services can be found within walking distance" in case crime in central cities declines.
- (4) Poverty will spatially shrink, but, where it is spatially concentrated, it will increase. Underclass becomes ghettoised in the core and the inner suburban ring. This group, not their areas, will be to a large extent socially excluded and uncoupled

Figure 1: R. Fishman's Ten Most Likely Influences on the American Metropolis for the Next 50 Years (1995)



from structural changes. In a spatial context, some of these fields will become subject of gentrification and "New Urbanism" - a process which contributes to a perpetuation of the urban underclass. The deep social crisis seemingly prevents a less disproportionate development because of the mismatch of required skills in the new urban service economy and the limited skills of adolescences living in these excluded neighbourhoods.

- (5) The idea of smart growth recommends a reasonably planned growth in order to restrict sprawl at the edge, to protect open space against further urban development and use space more effectively. As basic principles count among other things the determination of urban growth boundaries, focussing of the growth onto corridors of transportation lines, re-development and re-use of the central core, infilling in the core instead of organizing development on the open field, procurement of new lifestyles in the individual communes with the idea of urban functions in walking distances, and the introduction of regional governmental, infrastructural and economic coalitions among different spatial levels of cooperation.
- (6) The influence of internet could be able to replace the traditional functions of cities to concentrate the production, provision and distribution of goods and services, communication, culture and power. With its ability to support a more spatially ubiquitous distribution of functions the internet will change the built environment of central cities and suburbs. Although decisions can be made anywhere, all materialised social and economic activities remain localised. Therefore, the location of centres and their potential to concentrate information and power will shape new types, thresholds and structures of metropolitan areas.
- (7) The first suburban ring around the inner-city core, once built at the edge of the city as the incarnation of the American dream for the surmounting of the anti-urbanism, found its physical, functional, demographic and structural end of cycle. This first ring is too far from the affluent new edges and too close to the traditional central city as not to function as the main trap of the social underclass. However, this ring is of basic planning and functional importance for the entire metropolis area to prevent a further divide between core and edge, wealth and poverty, and could take over new functions fitting to the developing demographic and economic generations. With public and private resources models for an adaptive re-using, for smart growth and social diversity could be initiated.
- (8) The demographic process of shrinking household sizes and growing numbers of households will keep on continuing. The part of complete parent households with children will keep on decreasing while the part of old and young one- and two-person households will increase for different reasons. This induces a completely other kind of demand for living, living-forms and their sites both in the suburban and edge fields and in the inner-city core. This process will contribute to a renaissance of centres, especially to the revitalisation of the inner-city core, because these "non-traditional households" identify themselves with "the flexibility, convenience and diversity" which only classical centres have as their predominant quality.
- (9) Despite of these centripetal tendencies there will centrifugal development to relieve congestion by connecting the edge cities and scattered office parks and shopping centres by a new superhighway-system "Outer Beltways". Instead, the "Transportation Equity Act for the 21st Century" should predominantly support the public mass transportation and non-highway-systems. With traditional solutions like an expansion of the highway system it is to be feared that the spatial and social distances become even larger between poor and rich, that open space disappears, that the traffic congestion and the pressure on the central city will increase, and that still more sprawl will occur.
- (10) The last point in the list of **Fishman** stands in the opposite trend for most of the other predicted processes. The ethnic variety of the urban areas both in the inner-city core as also in the suburbs and edges will in-

crease and contribute so to the ethnic integration. **Fishman** picks up if the suburban political majority decides for smart growth instead of sprawl and the economic trends reverse towards the potential capacities of the inner-city core to concentrate, then the core and also the first suburban ring will be in the situation just to incorporate this genuine ethnic diversity in neighbourhoods and to develop the multicultural diversity searched from the new types of households for a new urban identity.

politan divide, sprawl and disintegration although many processes like the changing demographic structure and increasing cultural diversity give reason for a renaissance of new urbanism, at least for a dualism between the urban core and urbanised edges according to the two main markets of each housing, occupation and service. In a spatial view the foci of the 10 scenarios are concentrated in the urban core with its surrounding first suburban ring and the peripheral suburban zones including the subcentres and edge cities. Centripetal and centrifugal processes are working at once.

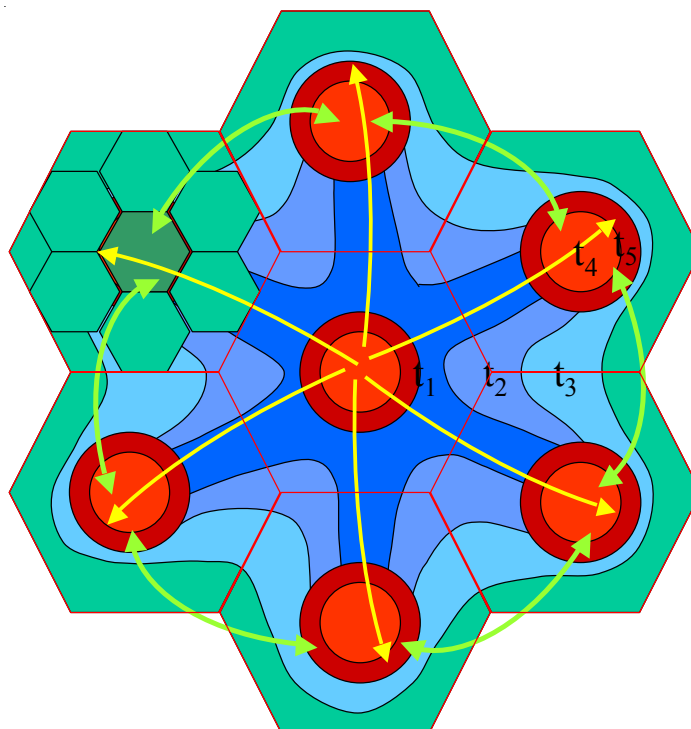
2. Processes that shape urban areas

To evaluate these ten most likely influences on the (American) metropolis for the next 50 years we should understand what their outcomes will be spatially.

Robert Fishman's prophecies about the future of metropolitan areas involve scenarios of urban restructuring characterised by the "three Es" - Environment, Economy and social Equity. In these 10 scenarios only a few anticipate processes that counteract the ongoing metro-

To evaluate these processes under the aspect of the three interdependently working It should be made clear how urban growth and development interrelate. Most models describe growth at one location in dependency of concentration potentials and growth advantages compared to other surrounding locations. Backwash resp. spread effects and forward resp. backward linkages shape a core-periphery gradient from intensive to extensive forms and functions, land use and rent. A more even gradient either has a weakening effect in the core's potential to concentrate or reflects a more spread distribution of functions, preferably in specialised centres. The more locations

Figure 2: Urban Region Growth Model



grow by size the more likely both alternatives will occur. However, this growth doesn't develop regularly and steadily but at certain locations first and in steps before the optimum economic and spatial shape may re-occur (fig. 2). The amoeba-like pattern of spatial growth reflects locational advantages along the development axis which shape in addition to the sectoral gradient at all distances from the core also an radial gradient from intensive to extensive use. In periods of strong growth impulses the sectoral gradient is dominant, i.e. is "leading" the spatial development, while otherwise followers fill in the more radial development. This pulsing like growth and development goes on as long as the core is able to concentrate the functions also to be provided for the growing periphery. An amoeba division will be the consequence first in a hierarchical order, then in specialised and finally in completely independent forms. This development towards periphery happens even without growth as long as the functions and their related forms are demanded, economies of scale are not outweighed, and economies of scope exist. Without this functioning and outweighing the urban area or parts of it will be doomed to obsolescence. A model summarizing these steps of development can indicate a conglomeration of urban units within a built up area without a clear core and distinct suburban area. This model only becomes true when all economic activities get paralysed, i.e. when benefits arising from economies of scale and scope and all transaction costs converge to zero.

Los Angeles has been described as one of these amorphous metropolitan areas where sub-urbanisation turned into urbanisation in a poly-centred, high density system of specialised cities and subdivisions. The 2000 US census showed strong urban population growth, clear signs of downtown and neighbourhood revitalisation, increasing rates of homeownership, decreasing rates of crime and poverty, but also progressive sprawl which reduces growth in the central city and older suburbs (KATZ, 2002). That growth-model like development can be tested in all metropolitan areas.

While the re-use and multiple use of already developed but restructured urban areas can

be interpreted as a success towards sustainability and sprawl can be seen as the major remaining problem, one has to realise the following three arguments that (W. COX Consultancy):

- (1) urbanisation doesn't threaten agricultural land while 90% of land taken out from production has been the result of improved agricultural productivity.
- (2) most suburban growth is not derived from central city out-migration but the result of population gain and rural-urban migration as well immigration. While most of the central cities in advanced economies shrink or stagnate, their suburban zones gain, i.e. in recent decades all urban growth has been suburban.
- (3) protected open space is expanding more rapidly than urbanisation.

3. Principles of growth

These arguments have to be connected with the growth principles to make sure that the graph between population growth and demand for space per person shows a parabolic curve. This effect will be intensified by the fact that population gain itself develops exponentially. The diagram in figure 3 shows different graphs connecting growth-rates and number of years to double population. In a time period of just one generation a doubling of the population can be reached by a 2% growth rate. With more moderate growth rates like 1.3 still a 50% gain of population will happen and even with a growth rate of 0,3 a 10% gain will result. However, in the case of Atlanta e.g. we are talking about different growth rates. Atlanta's central city grew by 6%, while the metropolitan area grew by 39%. Some formerly rural counties doubled their population in less than 10 years. Suburbs meanwhile dominate the employment growth and function as employment centres of specialised, even complex functions and services (KATZ). Suburban zones not any more serve land just for traditional families but they attract now all types of households and become ethnically more diverse. During the 1990's, "every household type grew at faster rates in the suburbs than in the cities" (KATZ).

Figure 3: Growth Rate and Years of Growth

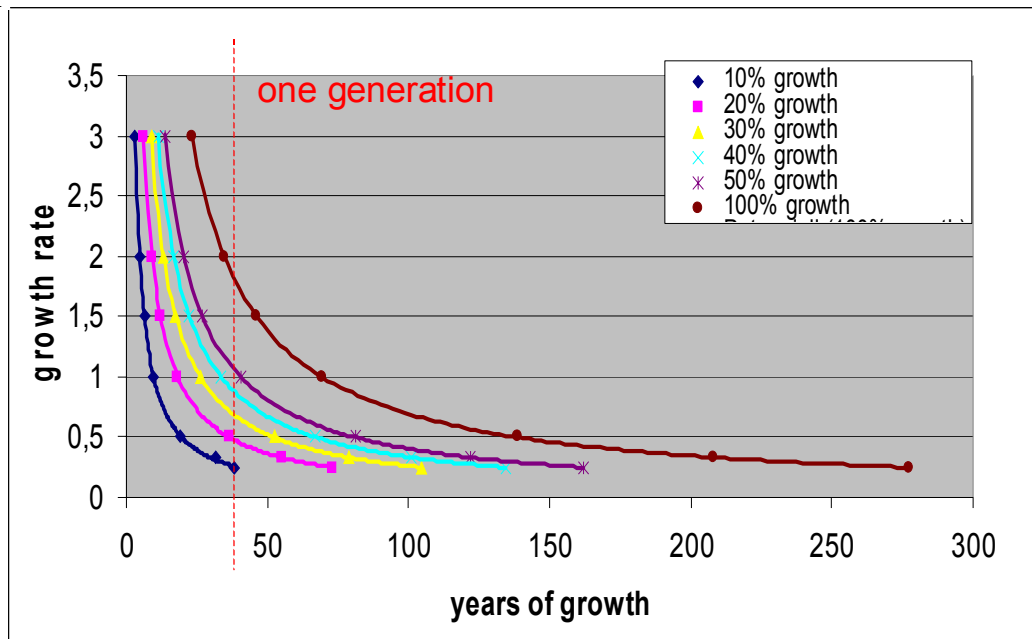
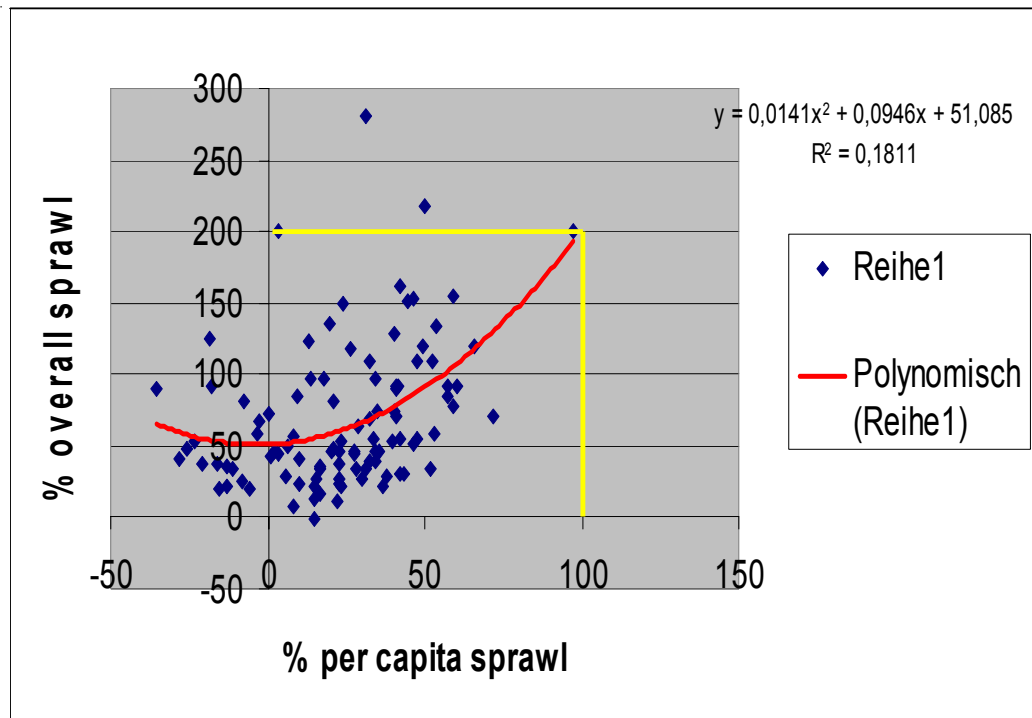


Figure 4: Causes of Sprawl (1970-1990)?



Translated into demand for space per person, these population growth rates will lead to an increase in land consumption which e.g. indicates an overall sprawl even with no per capita sprawl and doubles the overall sprawl at a 100% per capita sprawl (fig. 4).

In other words, land consumption is conditioned by growth and development principles

which are economical. Even in periods of no growth structural development goes on and spatial expansion will happen e.g. to give the central city a chance to restructure and to gain population at a later time. By contrast, sprawl is different from growth and development principles. Sprawl has to be seen as a uneconomical, therefore, faceless form of land consumption which creates needless transac-

tion costs. Sprawl is equivalent with mono-functional dispersed growth and not synonymous with prosperity. Federal and State policies set rules that "tend to facilitate the decentralisation of the economy" and the concentration of segregated homogenous groups especially the "concentration the urban poverty" (KATZ). Needless costs paid by taxpayers and not by the party responsible for are the main parameter to evaluate forms urban expansion and new concepts of growth.

With this understanding spatial expansion is more than sprawl and urban restructuring is more than smart growth.

4. The principles of smart growth

Back to the 10 most likely influences on metropolitan development. These influences describe scenarios which give reasons for both (1) a progressive fragmentation towards an urban pulp with no distinct core and suburban fields, many spatially scattered centres, and no clear edge and (2) for a renaissance of the mainly European urban image as a vision for the future where "density, proximity and visual and physical integrity create a sense of coherent community" (Kunstler, Scott). The magic

concept for the latter is the idea of smart growth. "The typical smart growth strategy focuses on

- (1) creating some kind of urban growth boundary that limits outward expansion of growth, and
- (2) encouraging new development in infill-locations in already urbanised areas" - locations which have been passed over in an earlier wave of growth or which are meanwhile abandoned - to "accommodate more intense, newer development" (FREEMAN, SHINGLEY and FULTON).

The American Planning Association (APA) defines smart growth as "the planning, design, development and revitalisation of cities, towns, suburbs and rural areas in order to create and promote social equity, a sense of place and community, and to preserve natural as well as cultural resources. Smart growth enhances ecological integrity over both the short- and long-term, and improves quality of life for all by expanding, in a fiscally responsible manner, the range of transportation, employment and housing choices available to a region." As a region-building concept which is carried by a continuous process of negotiation of a large number of actors representing network relationships, individual and group specific interests, and strategic alliances, smart growth offers

Figure 5: The Hoped For Effects of the Three E's

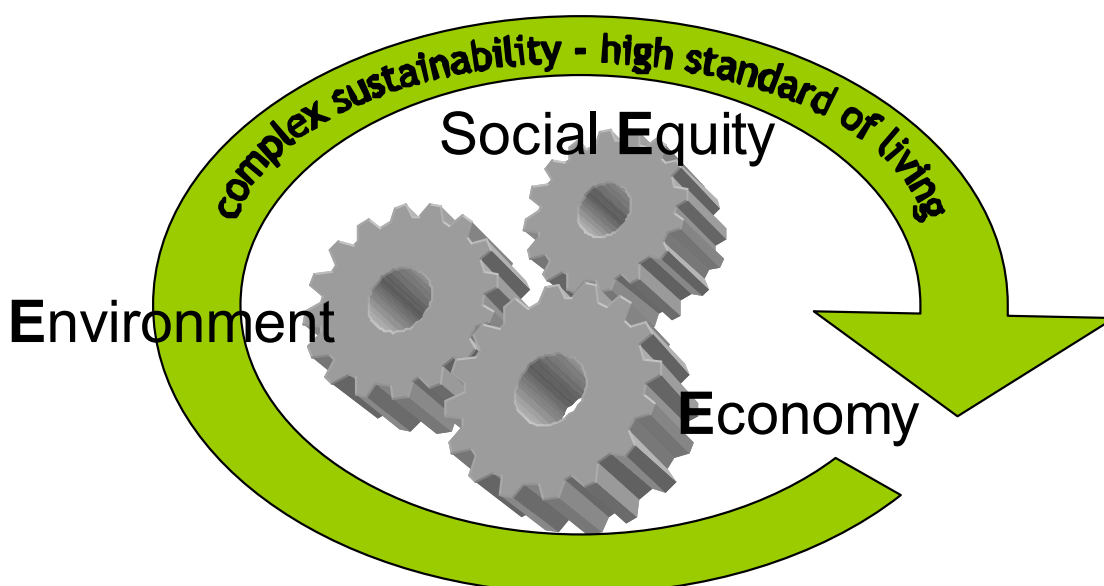
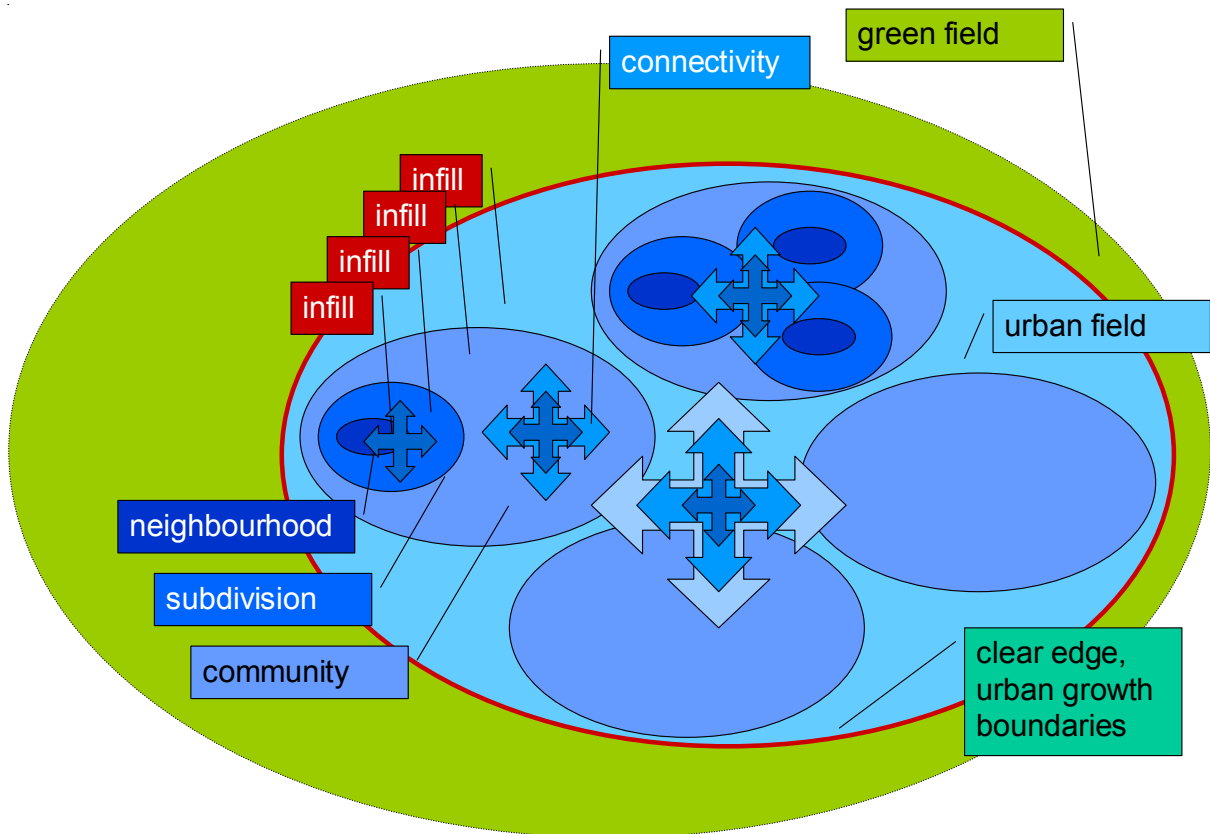


Figure 6: Smart Growth Principles



new conditions to solve spatial and structural problems on a regional level.

In the long run, these two main issues are expected to influence - as shown in fig.6 - (1) the revitalisation of downtowns and mature suburbs through infill development, revitalisation measures, reuse of existing structures, (2) the consideration of alternative transit modes, (3) a design for better new communities with mixed uses, urbanity, a well connected pattern of subdivisions and neighbourhoods, a creation of affordable housing through partnerships, a pedestrian scale, and with an orientation towards public transportation, and (4) the management of growth through growth boundaries and concentrated commercial and residential land use development and the protection of open space (SCOTT). Fig. 7 demonstrates the Toronto situation with its green belt plan. Areas for further expansion seem rather small when compared with the growth impulses.

Better opportunities, better access, higher financial and energy savings, lower fiscal disparities, better preservation of agricultural

land are expected to guarantee the hoped for effects of smart growth (fig. 8). The outcome (fig. 9) will be (1) denser subdivisions, (2) urban infill housing, infrastructure and employment, (3) higher density mixed use, (4) subcentralisation, neighbourhood and identity development and (5) integrated diverse housing, servicing, shopping and urban life style.

5. Smart growth and growth?

When comparing FISHMAN's ten most likely influences on the American metropolis for the next 50 years most of these fields can be applied to the principles of smart growth. More important is that smart growth - as it is implemented - does not properly reflect the urban problems associated with the nature of growth principles, the cyclical processes of concentration and de-concentration, of structuring and re-structuring to adjust changing challenges. In this view, it can be stated that smart growth "my turn out to be just a reprise of urban re-

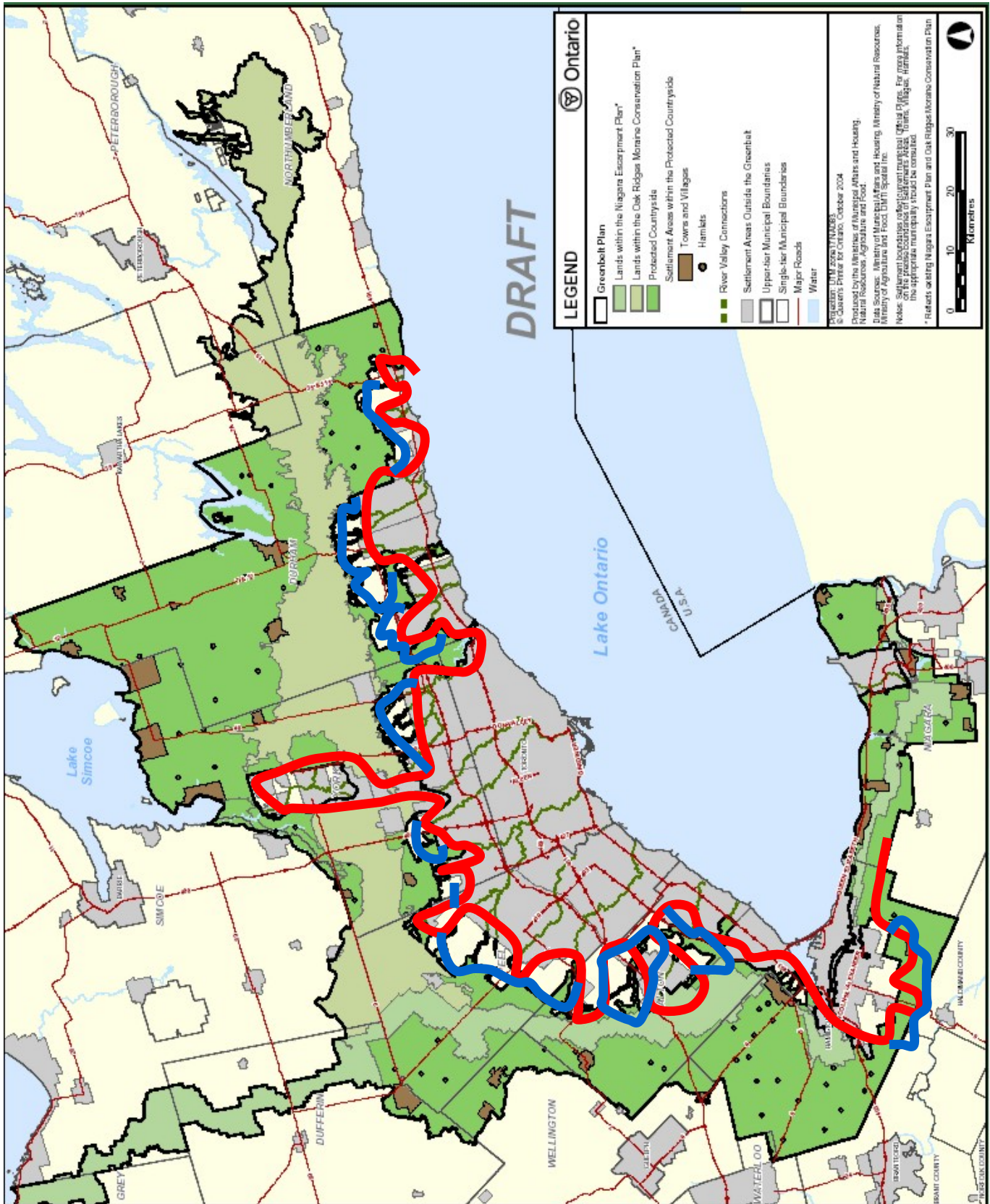


Figure 7: Toronto and its Green Belt Plan

Figure 8: Smart Growth Concept

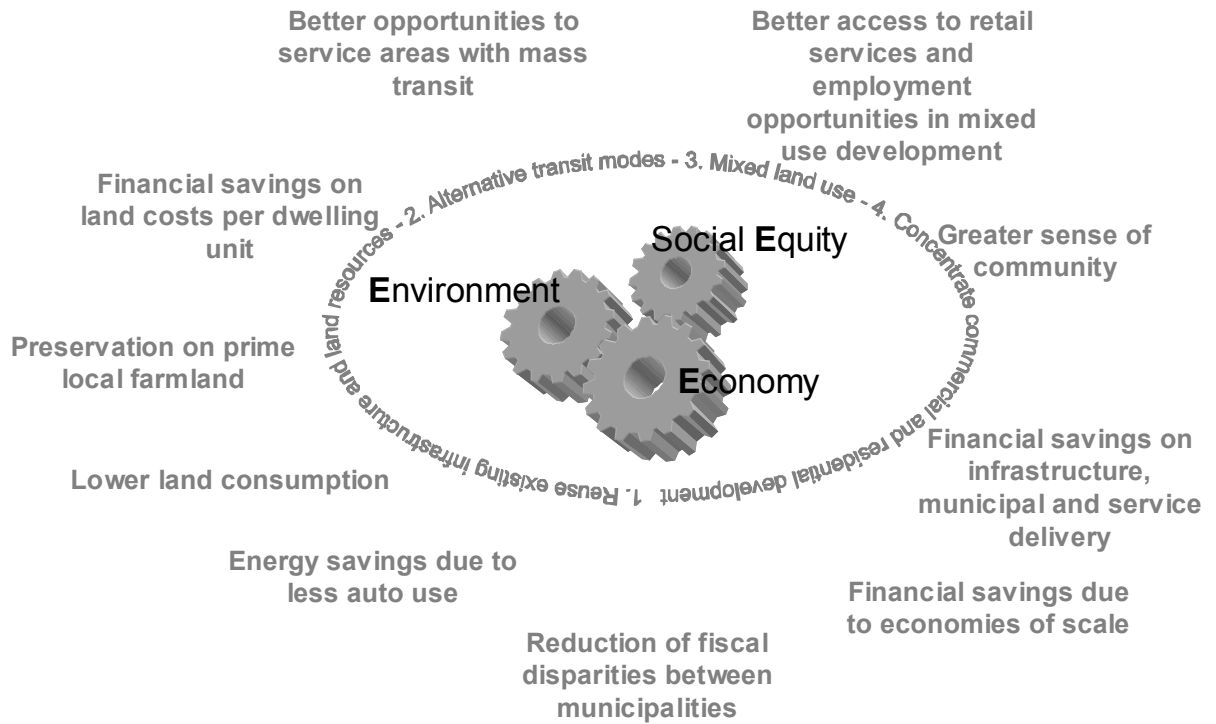
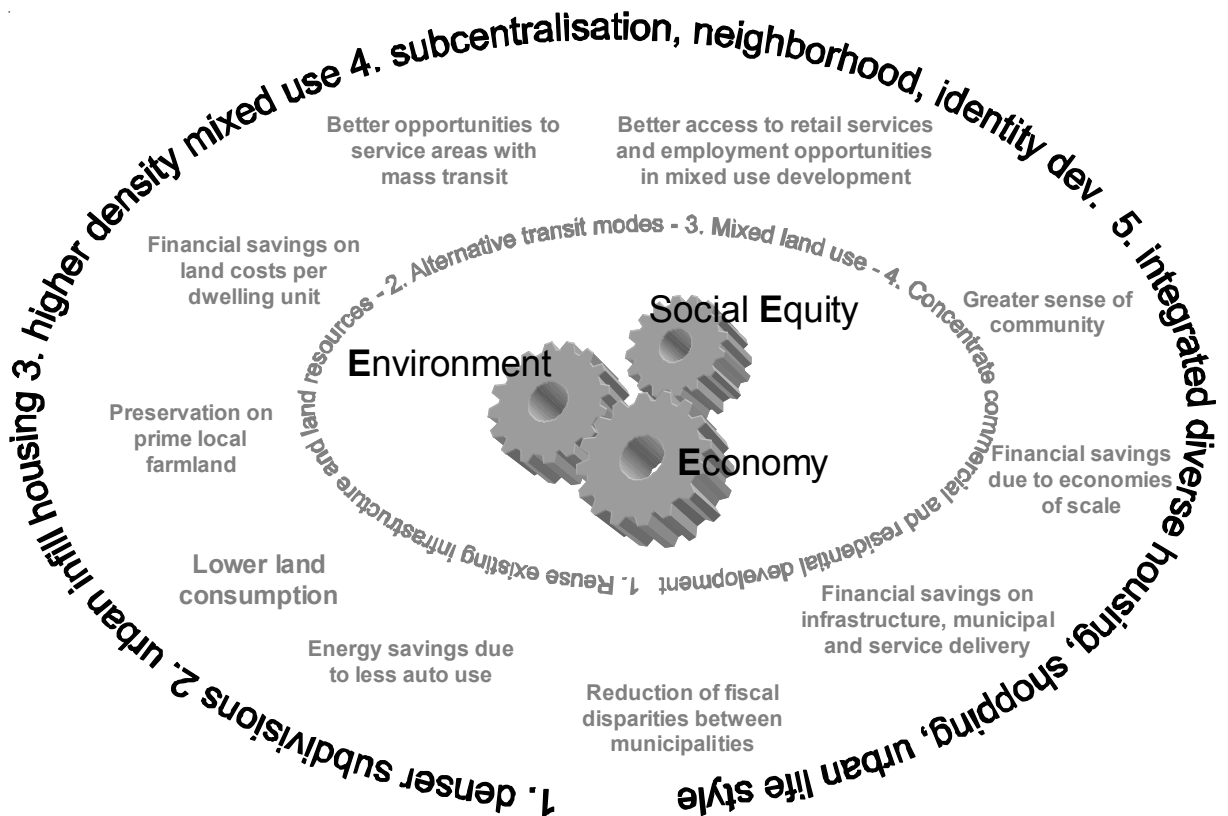


Figure 9: The Hoped For Effects of Smart Growth



newal" (HAYWORD) and not a concept to deal with growth.

As stated above all kind of growth doesn't result in an continuous and unlimited increase but appear in a stepwise respectively limited increase (fig. 10). Therefore all classical growth concepts describe growth in stages of increasing and decreasing intensity. All growth-

impulses inherent is a component which slows down growth and is able to counteract its positive effects (fig. 11). According to the principle of the conservation of energy growth impulses should progressively continue to avoid any regressions and counter-effects.

The new regulatory regime initiated by smart growth may function like a growth impulse

Figure 10: The Cyclical Nature of Development

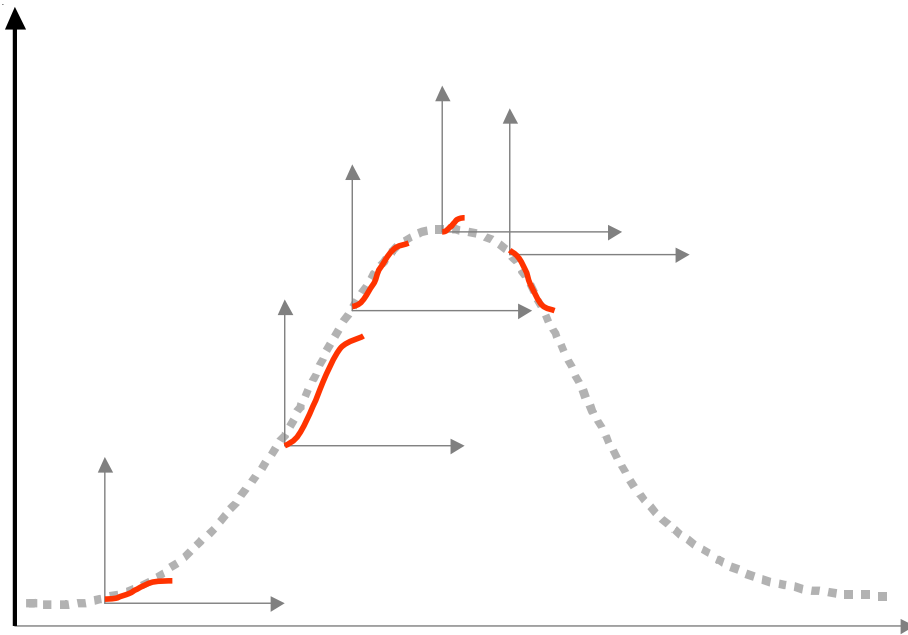
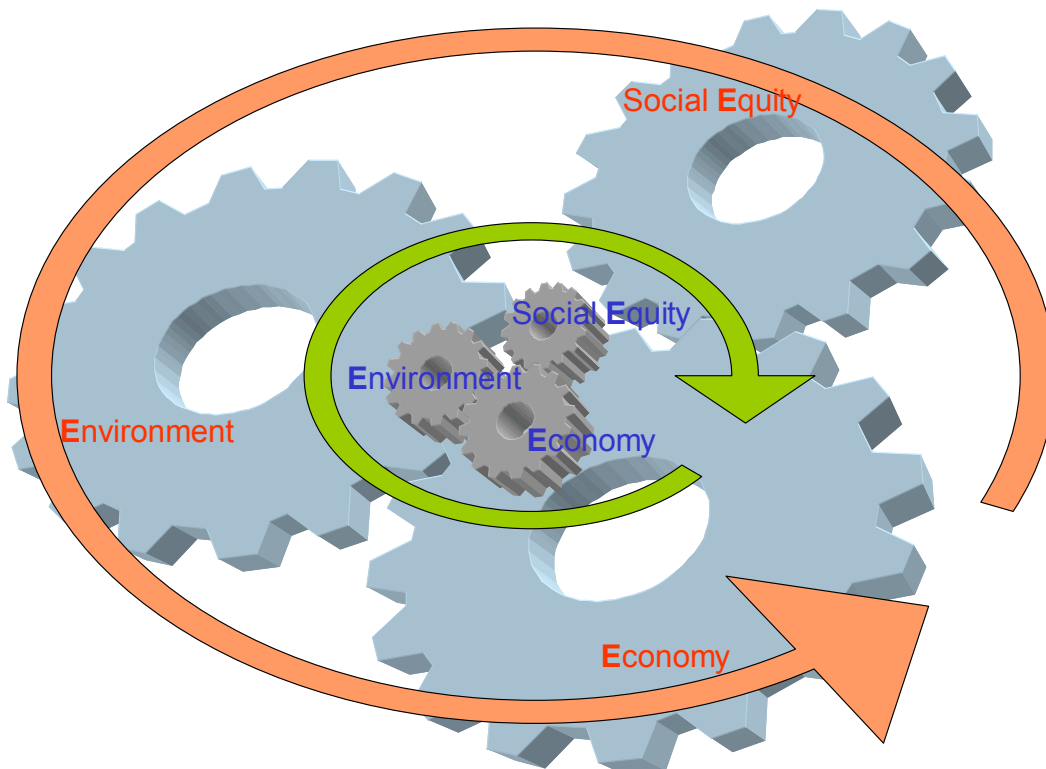


Figure 11: The Fear of Countereffects of the Three E's



whose energy becomes structurally and spatially effective up to a certain level, before it reverses and creates counter-effects (fig. 12). The idea of compact development develops towards benefits in terms of infrastructure, land consumption, urbanity and identification. The counter-effects reproduce with their short term cycles inflexibility, increasing competitiveness, shortages in all kind of markets, speculative markets for buildable lots, loss of affordable housing, out-pricing, new forms of segregation, increase in local congestion and air pollution intensity, and a curtailing of economic growth (fig. 13). These counter-effects call the functioning of the interdependence of the three corresponding "Es" into question.

No doubt that advocates in favour or in opposition of smart growth fight an irreconcilable contest (LITMAN). COX summarizes his criticism about smart growth with the statement of "retarding the quality of life", while LITMAN responds that COX ignores "confounding factors between size, density, congestion, income, etc.". An increase of housing and food costs is interpreted in COX's view as a coun-

ter-effect of SG through speculative markets and land shortage while LITMAN relates this increase to higher incomes in larger cities. Some of the incompatible standpoints are based on terminological and methodological misrepresentations of SG, so of SG regulations and SG strategies or problems of complex analysis of SG-effects. Both authors end in a stalemate whether consumer freedom increases or declines under the principles of SG. Similar debates are either related to the resulting disadvantages like congestion, pollution, public service costs, household costs, and higher taxation or to the resulting advantages like consumer cost savings, safety benefits, improved overall mobility, economies of scale, support for strategic land use objectives.

Three consequences can be drawn from the pros and cons as to the principles and strategies of SG:

- (1) Like other planning movements, planning principles, and planning concepts the idea of SG represents a theoretical complex system which tries to interfere with a grown up complex system in reality. Not the principles of SG which can be evaluated as

Figure 12: The Cyclical Nature of Smart Growth Development

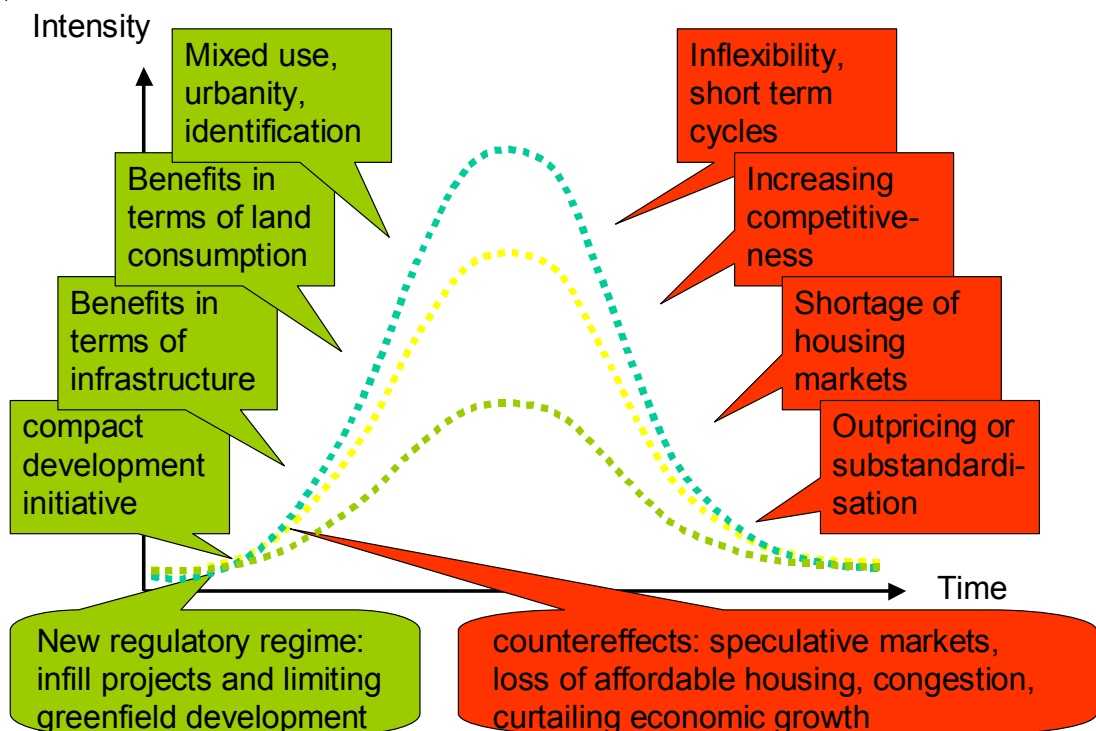
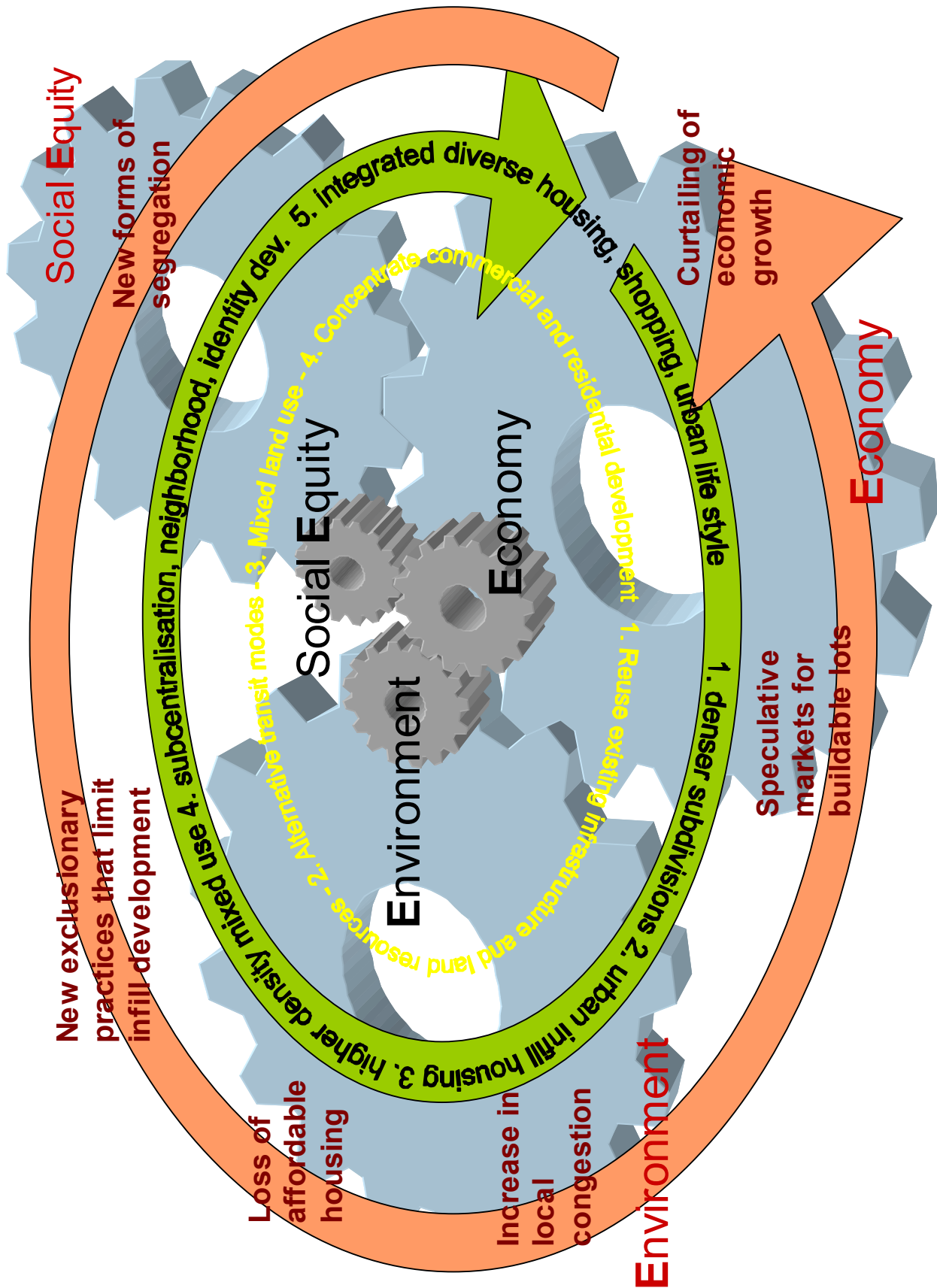


Figure 13: The Fear of Countereffects of Smart Growth



suitable to solve current problems of non-sustainable growth and development, but their implementations via strategies and regulations cause development paths whose stages in development and final results are not yet clearly defined. The principles reflect a complex new structure and seem to be acceptable and logic but the regulations for implementation and control are obviously not complex enough to reproduce these principles.

- (2) The opposing statements, arguments and effects may represent two sides of the same coin. Considering the cyclical character of all kind of growth impulses it can be taken for granted that the contrary results both belong to the same development path. The negative part of the paths becomes apparent when in a long run growth impulses can not be sustained and the intervention into grown structures affects only parts of that structure.
- (3) "Where power and money is involved, the devil is in the details" (NFRR). NFRR (Neighbours for Responsible Redevelopment) argues that "land use decisions are a local matter, usually in the hands of only a few [actors or politicians]. ... If there is anything smart about this plan, it is that big business listened and learned from [the principles of structural change to materialise it]. ... Equating public good and the use of eminent domain with economic vitality, most viable use, or smart growth opens the door to abuse" (NFRR).

6. Portland examined

Portland has adopted the most restrictive growth management policies in the USA, to "de-Californicate" Oregon, and is characterised as the model of SG. It, therefore, can be expected that Portland shows excellent results towards compact and complex sustainable urban development. While with the beginning of SG in the 70's and 80's sprawl, private car use could be reduced and public transportation contributed to a more compact development, the figures of the 90's indicate a complete reversal of the former positive results. The change in house values increased by 74.6%, it has

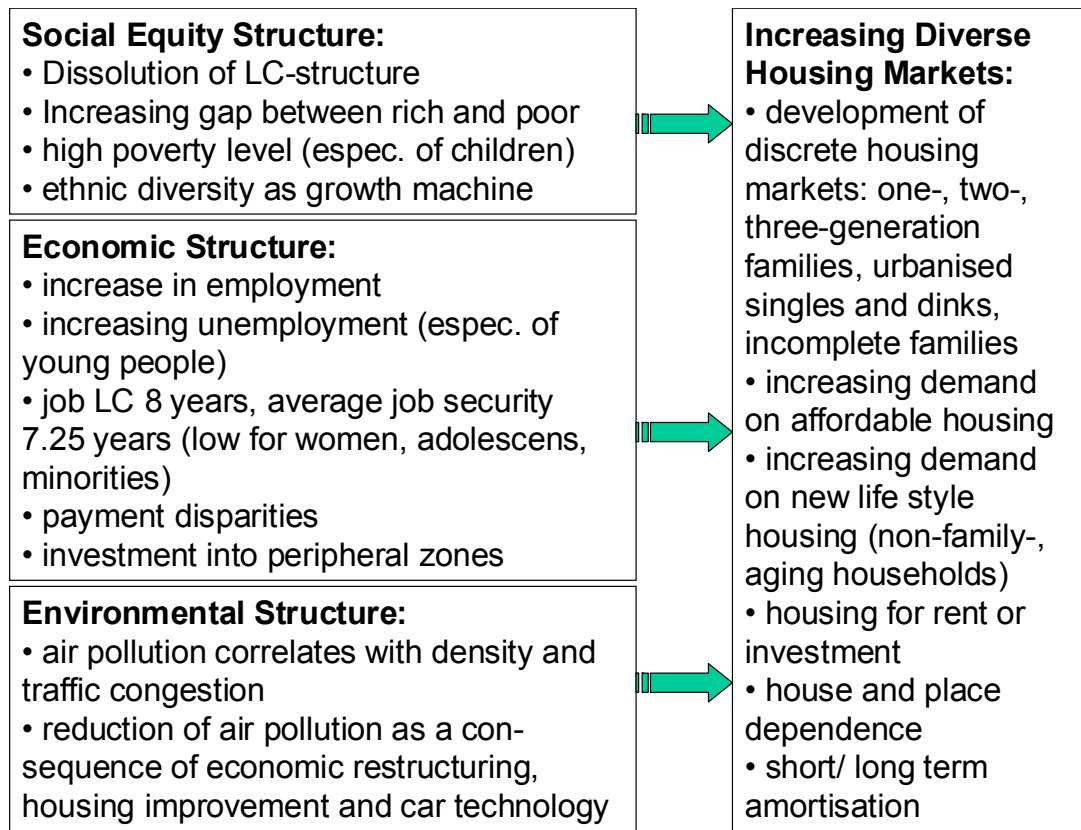
been the highest increase of all metropolitan areas. This value increase becomes effective especially in the housing affordability index, which dropped down by 44.5% in the same period. This figure is the 6th highest of all metropolitan markets. The fact that house prices increased dramatically and income only moderately, made the home ownership rate declining. Preferably the poor are out-priced and have to accept multifamily units. Their number almost doubled in just 5 years from 25 to 49%. It should not be assumed that this result is convincing in terms of compact development, but in the way how planning interventions into the consumer freedom of choice economise distinct housing markets.

As a second example, Portland has significantly expanded its transit service and has stopped building highways to achieve their goals (COFFMAN). However, "transit commuter use dropped 20% from 1980 to 1991" and "Portland experienced the largest increase in automobile use per capita from 1990 to 1999 of any US urban area with more than one million people". In addition, the 2000 Regional Transportation Plan indicates that over the next 20 years a smaller percentage of jobs and of residences will be within walking distance of transit service. This development burdens especially poor households which don't have access to autos (KATZ). That transit structure worsens with more dispersed suburban markets instead of one concentrated downtown market.

7. Who demands what and where: the urban housing market in development

Coming back to the current processes shaping the conditions to implement the urban restructuring by the "three E's" (fig. 14). The social equity structure has to adjust to the dissolution of the classical life-cycle structure, the increasing gap between rich and poor, and the increasing diversity which can work as a growth machine. The economic structure is facing both an increase in employment and an increasing unemployment especially of young people. In addition, the life cycle of jobs and job security drop down; they are especially low for women, adolescence and minorities and

Figure 14: Effects of the Three E's on Housing Markets



reproduce payment disparities. As to the spatial component of the economic structure investment follows jobs and housing into peripheral zones where the more modern infrastructure is concentrated and only little regulations hinder. The environmental structure is mainly burdened by air pollution whose level correlated with density and traffic congestion. Air pollution is low in economically restructured areas, in areas with housing technology improvement, and in areas where households drive more modern cars. These areas can be found preferably at the recently built up, low density urban fringe.

These current processes will lead to increasingly diverse housing markets in which one-, two- and three-generation households, urbanised singles and dinks, incomplete families ask for a very specific demand in wide ranging distinct price levels. Because of the increasing social polarisation the demand on affordable housing is increasing since low income households are becoming more and more socially

polarised and out-priced. These very diverse household types demand each for different new life style housing in which non-family and aging households play a increasing role. In addition to the role of the social environment, house and place dependence develops to higher importance since housing and job balance is a preferred locational factor. Private investment into housing depends more and more on the job security. In combination with small household sizes apartment and multifamily buildings for rent develop a higher share on the housing market.

When access, density, location and place, size, heterogeneity, and distinct regulations are decisive elements in the individual search process of housing, how is or how should the housing market of either urban or suburban living be structured (fig. 15)? The consciousness of density directs many households towards suburban, low density housing markets which are associated with desirable community characteristics, higher quality of life

Figure 15: Urban vs. Suburban Effects

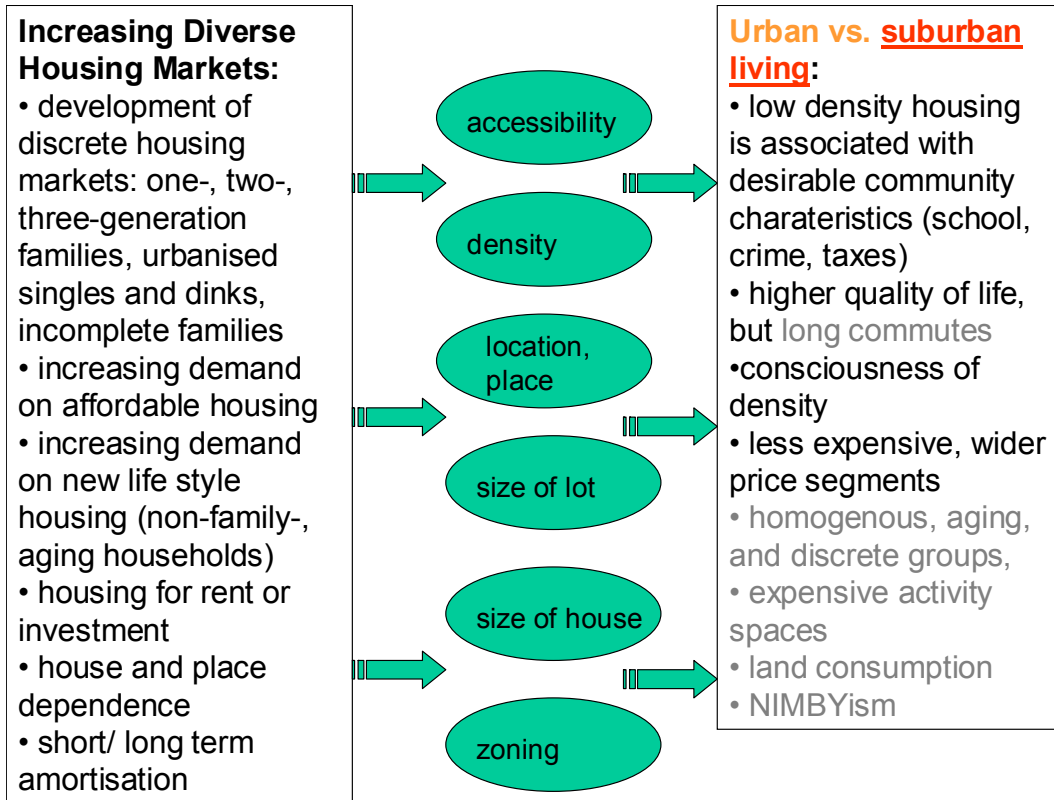
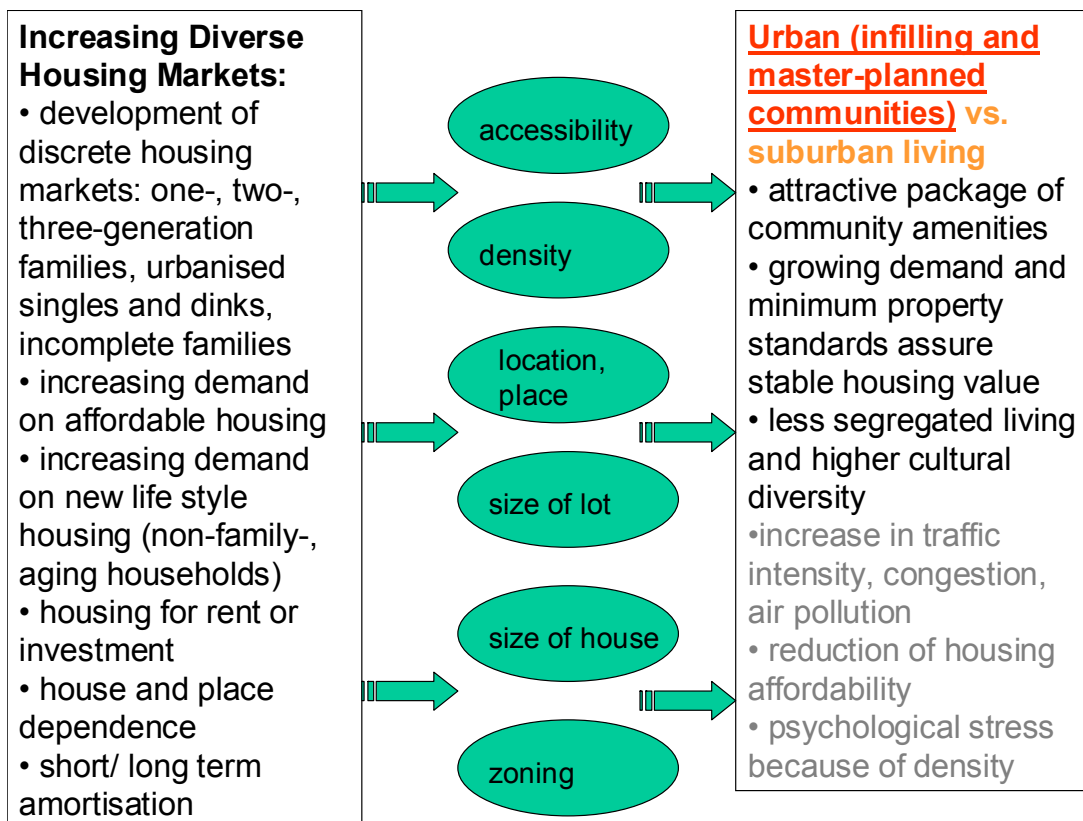


Figure 16: Smart growth vs. Suburban Growth



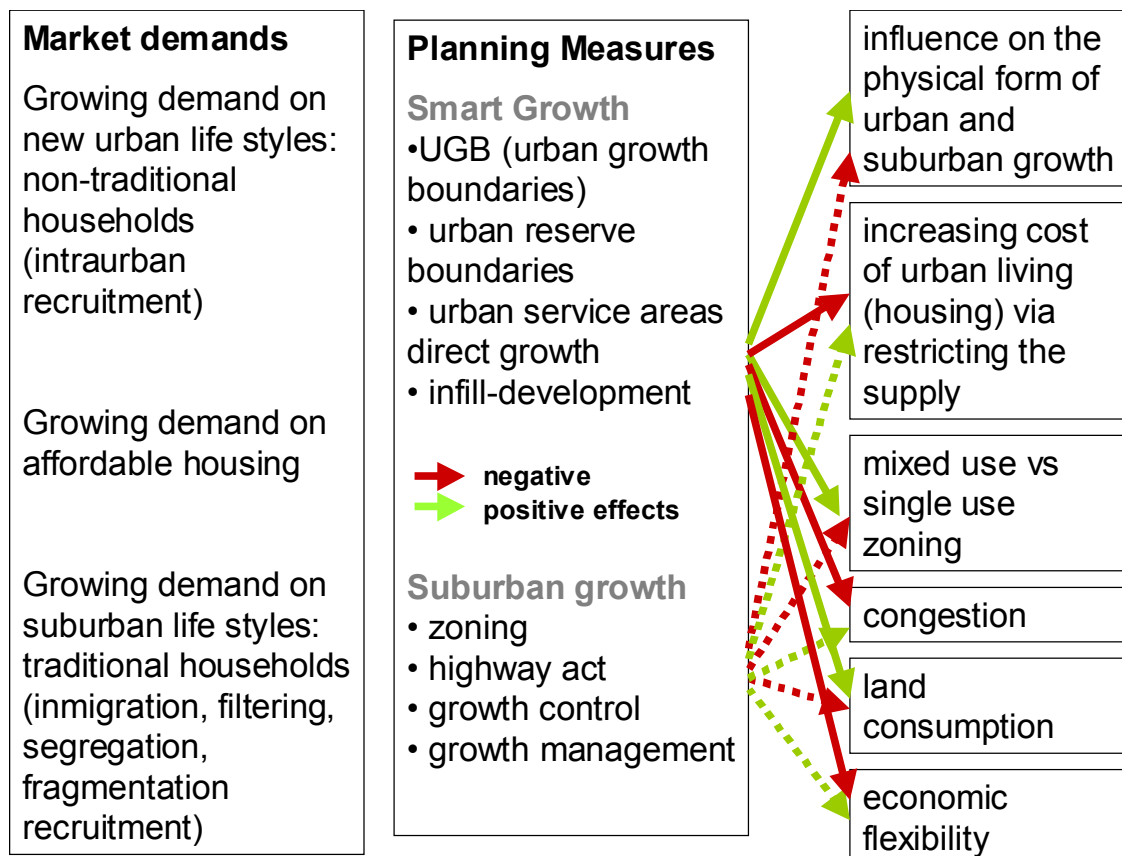
but long commutes. Since even high income jobs follow housing the latter argument loses power. The related housing markets offer wider price segments fitting to almost all income levels. Zoning and the character of land value based markets reproduce homogeneous, aging, and discrete social groups with expensive activity spaces, high land consumption and a strong NIMBYism behaviour in relation to the majority of the urban environment.

Urban living - based on infilling and master-planned communities - also provide an attractive package of community amenities (fig. 16). Their structure is founded on higher densities in which growing demand and minimum property standards should assure stable housing values. It is assumed that higher density living contributes to less segregated living and a higher cultural diversity. However, many people did not yet experience higher thresholds of densities. These densities increase especially for those households which can not afford

private homes. Despite better access to public transit, with higher density and a growing housing-job imbalance traffic intensity, congestion, and air pollution increase.

What are the resulting markets for housing and the quantity of demand (fig. 17)? Growing demand is on both new urban life styles as well as the suburban life styles. The new urban life styles are preferred from non-traditional households which will be recruited for the most part by inter- and intra-urban migration. Suburban life style living is preferred by traditional households mainly recruited by intraurban filtering, segregation, and fragmentation processes and by immigration. A third growing market segment is affected by forced migration. Out-priced low income households have to accept higher density zones either in older housing stock, in infill or compact housing projects. For these groups the housing-job balance develops in negative manner because of their income inflexibility.

Figure 17: Housing Markets and Planning Measures Affecting Urban vs. Suburban Living



8. Lessons to be learned

The question arises which of the two main planning concepts either suburban growth or smart growth will meet the need best. Depending on the number and importance of the planning concepts' structuring dimensions both concepts reproduce alternatively positive and negative effects. I.e., that the two concepts in their pure version are incompatible.

What could be a worst case scenario? KATZ argues that the modern American urban area is the result of urban planning which shaped structure and space by zoning for about 50 years. "SG seeks to correct the abuses of zoning by the imposition of new regulations. This could be a mistake." SG is evaluated as an elite planning "for that households and those who develop both residential and commercial projects". The fact that planners and politicians have not been successful in changing living preferences of people may result in quite different decisions. E.g. "areas outside urban growth boundaries and SG regulation could attract people unsatisfied with their regional growth management". Both "formal and informal housing development" may arise with lower densities, higher commutes, longer trips, a higher substandard housing share and more dispersed imbalanced housing and employment development. These are exactly the results which the regulations tried to avoid.

To avoid, that faceless sprawl, increasing costs of urban living, single use zoning, congestion, land consumption and economic inflexibility, the positive alternatives of both concepts should be integrated because the demand is given for both of the resulting markets. What could be, finally, the keys to link the two concepts?

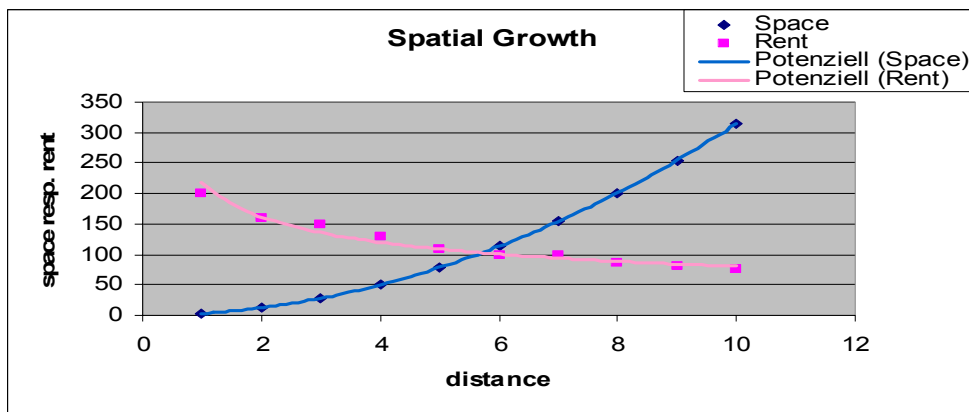
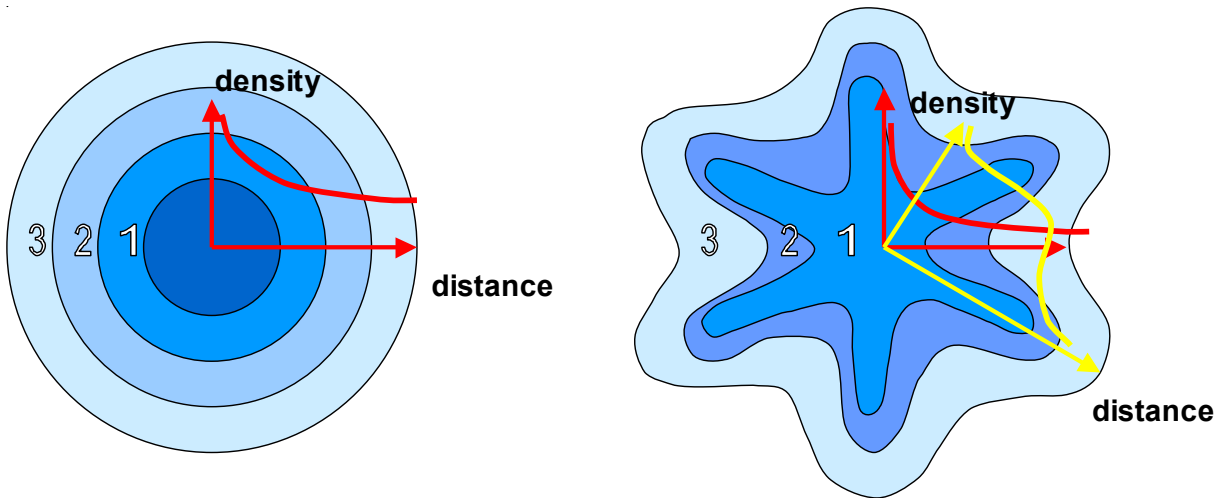
- (1) Growth boundaries should be applied in a flexible manner to allow growth and restructuring through physical expansion. Density at certain locations should be only as high as the market operates unhindered there. Less regulation sometimes results in higher individual freedom in case the individual responsibility for the social organisation develops with the gravity of the decisions made by the actors.
- (2) Subsidies - necessary and useful in a short

term view - mainly reproduce counterproductive results in the long run perspective. Markets should be constantly kept in operation. Most arguments for smart growth found counter-arguments because of either inadequate implementation and measurements of the planning principles or of its exclusionary goals. Subsidies once given to interfere or balance market systems afford a long lasting initiative. They should be used progressively by time and quantity to monitor their hoped for results.

- (3) SG or any kinds of planning concept have to be carefully adjusted to regional conditions and need. It should be a bottom up concept where trust plays the decisive role. A monitoring system should escort the initiated processes to tune the system at any time.
- (4) The most important factor for the control of any of the preferred principles is full cost accounting in the view of sustainability. All decisions are made or rejected by the relation of costs and benefits. Benefits resulting from pioneer, concentration, intensification and access effects are the driving force for activities which should be supported by both strategic and action plans. However, all costs at all spatial levels should be considered and paid by those who profit from. Impact costs should be carefully evaluated. Density or access e.g. as economic expressions of locational advantages or disadvantages are part of a self-governing and self-regulating system, which balances costs and benefits. It shouldn't be undermined either by market interventions or unbalanced benefits.

Fig. 18 compares two models each representing the contrasting principles of growth. The first model represents in a radial form concentric circles whose densities follow a negative exponential gradient. The second model contains areas with the same size as in the first model but in a star-like, amoeba form. For economic reasons the density within the growth-axes can be very high and will be compensated by low densities in the areas between the growth-axes in short distances. The second model seems to be more flexible as to a permanent adjustment of growth dynamics.

Figure 18: What Model Seems to be More Smart ?



Such a model could be helpful to support SG principles.

Further discussion on the importance of SG for the future of urban areas will go on. As long as e.g. the housing market successfully offers high density peripheral housing in a week housing-job-service-balance, something must be wrong. The idea of SG seems to be excellent but its implementation and governing seems to be imperfect and full of tricky frauds.

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METAR – MANUSKRIPTE ZUR EMPIRISCHEN, THEORETISCHEN UND ANGEWANDTEN REGIONALFORSCHUNG

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