Inclusive growth and place layout

This briefing note synthesises the key themes from a project supported by the Bartlett Enterprise Development Fund and Space Syntax Limited in 2017 which investigated 'The impact of space syntax research on urban policymaking: linking research into UK policy'.

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HOW CAN SPATIAL THINKING IMPROVE POLICY INSIGHT?

Overview

- Policymakers increasingly recognise that economic growth needs to be shared more broadly in cities, through 'inclusive growth';
- Space syntax analysis reveals the underlying structure of cities, showing how connected or segregated their streets are. This structure influences the accessibility of amenities and economic opportunities to city residents - a key aspect of economic inclusion;
- 'Deprived neighbourhoods' are not inevitable – in many cities rich and poor live side by side. However, some spatial layouts disconnect residents from their surrounding street network, reducing pedestrian movement and increasing potential for anti-social behaviour and crime. Such spatial isolation can exacerbate problems of social and economic isolation;
- The economic prosperity of whole towns and cities may be influenced by where they sit in the UK-wide street network.

How can spatial thinking improve policy insight?

Connectivity and inclusive growth

There is a growing concern amongst policy makers that economic growth is not uniformly shared, and that there is a need for more socially just forms of economic development, now commonly described as 'inclusive growth' [1] . Accessibility is a fundamental aspect of inclusive growth, in terms of access to essential services and access to economic opportunities (e.g. jobs). For example, research in Atlanta, USA, has shown that while the location of poorer areas in the city has changed over time, they have remained poorly connected to local facilities [2].

Accessibility to amenities

Urban planners often aim for a polycentric distribution of services and amenities across a city to ensure accessibility. For example, the Portland Development Corporation in Oregon, USA, has made the development of 'complete neighbourhoods' central to their city strategy [1]. However, for local amenity-rich centres to work, they need to be supported by the underlying structure of the street network. Local economic centres usually have a core of streets that have high spatial accessibility at both the city-wide and local scales. This means that they attract a mix of local and larger-scale movement flows, resulting in more 'passers-by' as a basis for local economic and civic activities. Without such footfall, planned local centres may fail.
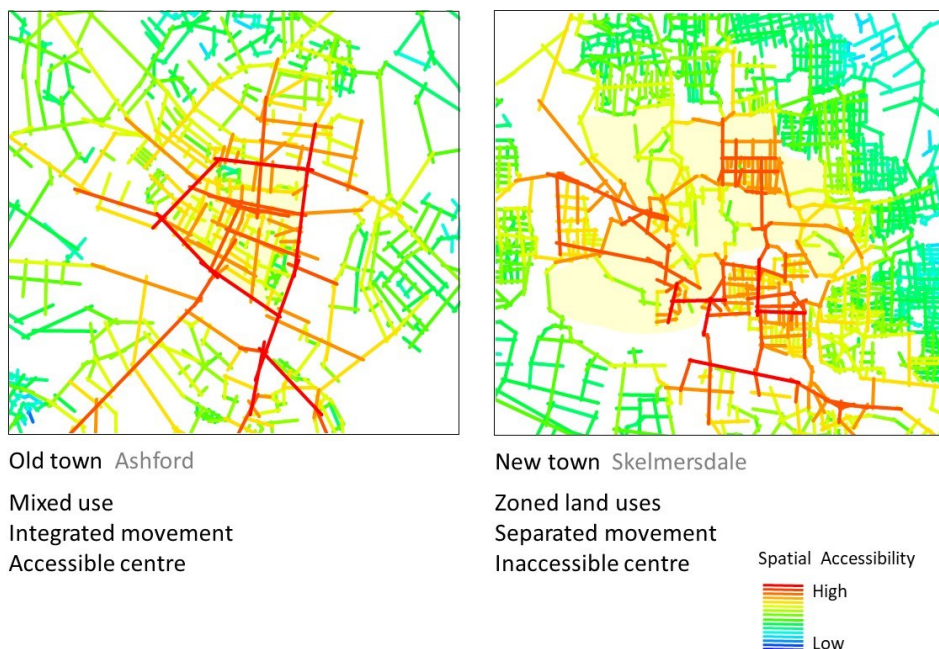
Urban planning can also disrupt the economic functioning of town centres - Figure 1 below shows the historic centre of Ashford and the centre of a 'new town': Skelmersdale. While Ashford has a well-supported economic core, Skelmersdale has a void of inaccessible streets at its centre, undermining the accessibility of its economic and social amenities.

Figure 1: Planning disrupting town centres

Old town Ashford

Mixed use
Integrated movement
Accessible centre

New town Skelmersdale

Zoned land uses
Separated movement
Inaccessible centre

Spatial Accessibility

High

Low

Source: Space Syntax Limited

Accessibility to jobs and other economic opportunities
There is debate about the existence of 'neighbourhood effects' in cities - while some economists identify that where you grow up can strongly affect life chances [3], others suggest that such outcomes stem from individual characteristics of residents rather than any inherent (spatial) disadvantage associated with the neighbourhood itself [4]. However, the impact of local urban layouts may be higher for people with restricted mobility [5]. Being spatially segregated can reduce links into broader city social networks [6], while research on deprived localities in Stockholm [7] has shown that residential segregation results in a less diverse groups of people mixing in public space, and less information sharing about job opportunities. There is also evidence that urban form influences the urban segregation of minority communities [8], leading to both positive effects (e.g. 'bonding') and negative effects (e.g. a lack of 'bridging' links into wider urban economies).

Are deprived neighbourhoods inevitable?

Some economists argue that the 'residential sorting' of people into richer and poorer neighbourhoods in cities is an inevitable process, as those on lower incomes seek lower rent values [4]. However, space syntax analysis shows that the spatial arrangement of poverty in cities is not so straightforward. While people do live in more accessible or less accessible streets according to income, this often occurs at the very local level, with rich and poor people living on adjacent streets [9, 10]. Such fine differentiation is not always visible when streets are grouped into larger 'statistical areas' such as census output areas. Where concentrated urban areas of deprivation and worklessness persist in cities, this could be exacerbated by planning practices and urban changes that have led to whole areas becoming relatively inaccessible to the surrounding street network. Conversely, poorer neighbourhoods that are spatially accessible may act as 'escalator' areas [11], helping people to access work while paying cheaper rents and building up their resources.

Voids in the urban fabric exacerbate anti-social behaviour

Areas that have less vehicular and pedestrian movement in cities often suffer from a lack of 'natural surveillance' (people observing the activities of other people) which can lead to problems of crime and anti-social behaviour [12]. Certain groups (such as youth gangs) can monopolise areas that are not broadly overlooked, making these spaces unattractive and threatening for other groups of people, particularly the elderly. Because of their design, modernist housing estates are particularly likely to create such effects, as they are frequently inward-looking, with relatively complex design that discourages both local and through-movement [13]. These factors combine to create a situation where housing estates often feel very empty, even in the middle of the day - 'perpetual night' syndrome [14]. While regeneration schemes in such estates have had mixed results [15], success rates could be improved through an awareness of how estates connect with the broader urban fabric (as underlined in recent government guidance) [16]. Social housing estates may also benefit from the development of more street-based housing layouts [17].

Connectivity within the UK-wide street network influences economic prosperity

Economic prosperity is unevenly spread across the UK. Space syntax can help in the strategic assessment of economic growth potential at the national scale through, for example, analysing the connectedness of places within the urban system [18, 19]. Clear correlations have been found across the UK between the structure of road networks and the distribution of several socio-economic variables, including productivity, affluence and employment [20].

How can spatial thinking strengthen policymaking?

- The connection between the spatial layout and connectivity of a place is not widely understood. City leaders would be better equipped to tackle inequalities if they were better informed on how spatial layout affects exclusion.
- Improving spatial layout does not necessarily mean major redesign work. In many situations small interventions can have a big influence on overall connectivity. Other measures can involve softer interventions, such as routing transport services to more segregated areas and/or assigning public wardens to areas that are vulnerable to antisocial behaviour and crime;
- A UK Wide space syntax map (available here: http://www.spacesyntax.com/openmapping/) could potentially help in planning new housing, revealing the areas of the country (and the areas within cities) where accessibility to economic opportunity would justify increased housing densities.

What is space syntax?

Space syntax is a methodology developed at University College, London and used over the last forty years in architecture, planning, urban design projects around the world. It measures the connectedness of individual streets within a street network, producing a clear picture of varying levels connectivity at scales from villages to entire countries and beyond. It is an important tool for understanding the strong relationship between street patterns and many urban policy issues, from transport to inclusive growth. Building layouts can also be analysed in the same way. The international space syntax research base provides powerful, practical insights in the way cities function, and how they can be improved.

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