

USING SPACE SYNTAX AND HISTORICAL LAND-USE DATA TO INTERROGATE NARRATIVES OF HIGH STREET 'DECLINE' IN TWO GREATER LONDON SUBURBS

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Abstract

The purpose of this paper is to provide some much needed theoretical grounding and historical-morphological context for the narratives of communal loss that recur in the reportage concerning the British high street. Given the topicality of this issue for policy-makers it is worth enquiring into precisely how far such narratives are in fact supported by a long-term perspective on historical changes in high street land uses in relation to the evolving spatial morphology of small town centres, in order to better distinguish the extent to which a further layer of socio-cultural explanation is required to account for the concern over 'decline'. This research, undertaken as part of the EPSRC Adaptable Suburbs project at UCL, uses fully digitized historical maps, contemporary and historical land use data and space syntax analysis to identify historical-morphological parameters of change and continuity in and around two suburban high streets of Greater London since the nineteenth century: Surbiton and South Norwood. Drawing on Hillier and colleagues' theory of 'movement economy, the contemporary English high street, as it is represented in the case-study areas emerges as a distinctive and resilient spatial morphology which has supported varied modes of land use over time. It concludes that the narrative of high street decline in part reflects a dominant focus on difficulties facing the UK retail sector and that a broader focus on the high street as a (re)generative social space rather than simply as a 'retail attractor' would allow for a broader appreciation of both its morphological and socio-economic capacities.

Keywords: space syntax, suburbs, high streets, town centres, decline

Theme: Historical Evolution of Built Form

Introduction

Whether it is the impact of internet technology, the effect of the economic downturn on retail sales, the blight anticipated by rows of vacant shops and offices, the loss of local diversity represented by the expansion of national chains or fear of vulnerability to looting by rioters, the heightened public sensitivity towards the fate of the traditional suburban and small town high street in the UK, fuelled by an intense period of media focus and earnest policy-orientated debate, sometimes resembles a kind of *panic* regarding the social condition of Britain. In the UK this emotive tendency is encapsulated in the government-commissioned report by the celebrity businesswoman Mary Portas in which she outlines a strategy aimed at rescuing the high street, portrayed as an essential aspect of British identity that has reached a “crisis point” (Portas 2011, 2). This ‘spirit of emergency’ was encapsulated in Portas’ popular television series in which she puts her ideas to work in a number of ‘Portas Pilots’ – with mixed results (BBC 2013). That Portas and the popular media have clearly identified in the British high street a popular *cause celebre* indicates the extent to which concern over the fate of the ‘high street’ extends beyond journalistic deployment of this term as a metonym for the retail economy as a whole or even a common-sense concern for the accessibility of local services. Rather, it serves to illustrate a more intangible anxiety about how people perceive social change affecting the places they live. The ‘high street’, in other words, is also a metaphor for ‘community’ and its ‘health’ a barometer of communal well-being. The widely accepted narrative of the ‘decline of the high street’, therefore, is grist to the mill of a broader narrative of communal decline, long stoked one the one hand, by those who bemoan the homogenizing effect of big businesses on local town centres and, on the other, by the roll-call of ‘hard headed’ financiers or urban planners who line up to pronounce the ‘death’ of the historical high street and suggest that consumers have substantially shifted their allegiance to the new consumer experiences offered online and by large scale shopping malls (Barker 1999; NEF 2005; Allan 2008). The Chairman of Majestic Wine, Phil Wrigley referred to the “death spiral “of the high street and suggests that it be converted to residential use¹. Yet Barker’s controversial notion of ‘non-plan’ is surely right in one respect. If there is one thing British high street does not need it’s any more one-size-fits-all ‘solutions’, whether from financiers or planners.

From all this we can conclude that something is clearly ‘up’ with the high street in the UK – and similar issues are found in many developed countries (*Urban Design* 2013). A combination of changing consumer tastes, increased personal mobility, demographic patterns – particularly women working further from home – out of town shopping and rapidly increasing e-commerce all play their role in what is unquestionably a period of great turbulence for local – as it is for national economies. Certainly the argument in this paper is not ‘problem what problem?’ the evidence to the contrary is too clear. However, a familiarity with much academic and policy work in this area suggests that the narrative of high street decline could benefit from a little more critical scrutiny. After all, we have seen the decline of the high street several times before:

In many places the personal and local character of the shops is disappearing. This is because many shops are now only branches of the big multiple stores (Richards and Ravillious 1938, 8)

Barker (1999), inspired by Garreau’s (1992) work on ‘edge city’ believes that out-of-town shopping malls would soon consign the “anachronism” of the historical high street to the past. Again the tone is polemical – we might agree that a certain kind of popular image of the high street *is* less and less representative – the ‘butcher, the baker, the candlestick maker’ – if indeed it ever was. Yet shopping centres no less than high streets face challenges from e-commerce and if, as current thinking in retail future planning would suggest, shopping itself is becoming less and less about the purchase than about the broader ‘experience’ on offer – then it is far from clear whether large malls have the edge on traditional town centres (Allan 2008). Certainly the durability of historical town centres is not something that traditional shopping malls seem able

¹ Financial Times 1/2/12 ‘Wrigley calls for residential UK high streets’
[<http://www.ft.com/cms/s/0/ac4e4a64-4ce5-11e1-8741-00144feabdc0.html> accessed 5/6/13].

to imitate as they have no obvious mechanism to sustain themselves beyond their role as attractors (Palaiologou and Penn 2013). Hillier (1999) reminds us that 'edge city' is a fundamental process of urban growth; the jury must still be out whether shopping malls have the same capacity in this respect as suburban town centres, at least in a UK context.

It certainly does not help in understanding the 'high street' (or malls for that matter) if it is approached in narrowly instrumental-normative terms as providing a 'good', where this is conceived in historically particular socio-economic or even architectural sense. To do so is to set up inflexible ideas of what the high street *should be*, rather than thinking in a more open-ended fashion about the nature of 'high street' as a complex emergent quality of urban space with distinctive potentials for attracting 'footfall' (co-presence) regardless, in the first instance of the presence or otherwise of particular 'attractors'. The idea that the spatial morphology of the (sub-) urban grid itself creates movement attractors is, of course, a staple aspect of the space syntax theory of cities as 'movement economies' (Hillier 1996). It has important implications for how the future of the high street is conceived since it promises to expose the mechanism by which the *idea* of the high street can legitimately be broadened to encompass the diversity of ways in which small town centres might be said to mobilize community.

Three tendencies in high street research obstruct such a perspective. Firstly, the traditional practice of financial journalists of using the term 'high street' to refer to the UK consumer economy dovetails with an academic tendency to equate the notion of a town centre with the size of the retail offer. As we have noted elsewhere, not only does this privilege retail as the primary, if not sole, index of town centre activity but, in practice, it tends to privilege relatively large-scale retail activity with large turnovers and easily accessible statistics over smaller retailers and more ephemeral kinds of town-centre retail such as markets (Griffiths *et al* 2008). Secondly, and following from the first point, the aspiration that high streets should exhibit 'diversity' and 'mixed-use' easily becomes conflated either with a rather particular urban aesthetic associated with gentrification processes on one hand, or with rather nostalgic visions of the 'good old days' on the other. Decontextualized, as they often are, these terms come to mean little at all – other than suggesting a certain worthiness of intention. Not only does this debate often tend to have a heavy retail focus itself, but it means that the very notions of 'diversity' and 'mixed-use' are rendered in a rather reductive-instrumentalist terms as being socially desirable, with little thought given to the urban processes that give rise to a complex phenomenon that extends beyond the 'boutique' outlets associated with gentrified neighbourhoods. There are signs of progress on this front. Hall's (2011) work on ethnic retail in London shows there are more dimensions to retail practice than the limited range of categories (upmarket, traditional etc.) that are usually applied. Similarly, a thoughtful government report on high street performance notes how measures of non-commercial activity are "missing from current assessments of high street performance" (BIS 2011: xv).

Thirdly, and most relevantly for this paper, most policy-orientated research on the high street has little to say about the material environment which gives rise to the broader social-communal qualities people associate with high streets and town centres – some honourable exceptions (for example Gort Scott and UCL 2010, Jones *et al* 2007; *Urban Design* 2013) notwithstanding. This absence hamstring the debate considerably. Where the morphological and built-environment qualities are not taken into account the high street is translated from a place into an object, passive in the face of neo-liberal economic forces on one hand or historical conservation regimes on the other. Where the material fact of the high street itself is glossed over as a given it only serves to reinforce the focus on retail because the less tangible 'noise' of everyday life in the town centre becomes easier to ignore. Since big retail is the hardest to ignore, this elision further serves to artificially separate what we might call the most self-evident 'retail core' (i.e. the 'centre of the centre') from its relatively less retail intensive or residential hinterland. Yet Vaughan *et al* (2010) note that the 'live' suburban centres bear an integral relation to the wider 'active' centre in terms of accessibility and synergies of by-product activities.

Where the emergent material domain of the high street as a persistent site of a broad sociability is unthinkingly rendered as an economic reduction, a 'hub' or 'attractor' for retail with a certain (preferably large) catchment of vehicular accessibility, this has often been at the expense of the accessibility of the historical high street to pedestrians in its immediate hinterland (van Nes 2003). In this paper we reflect on how the relatively unplanned process of town-centre growth might have the capability to exploit different possibilities for high street 'footfall' from the kind imposed by infrastructural interventions such as ring roads that are used to promote the high street as an 'attractor'. The danger, of course, is that when the attractor becomes 'unattractive', closes down or simply leaves, then it becomes harder for the historical ecology of the high street to recover the situation – a challenge, in other words, to its long-term sustainability. To note that aspects of the contemporary British high street are under threat should not be to dismiss the underlying settlement-growth dynamics that gave rise to the broad mix of socio-economic activities we associate with the high street. As Hillier (1999; 2009) has noted, the dynamism of 'edge city' is not restricted to the edge: he argues it is the *pervasive* nature of centrality that allows cities to sustain themselves.

Even when the local street network has been left substantially intact, of course, the question remains – given the vast range of states in which the contemporary high street finds itself – 'what does morphology matter'? Most policy literature is still firmly stuck in the paradigm of the attractor. This is where space syntax is so insightful. The theories of the movement economy and virtual community offer a different way of approaching the problem by allowing that a degree of attraction is implicit in the configuration of the grid itself, what Hillier calls 'grid inequalities'. It is these underlying asymmetries in built form that provide the stimulus for the movement economy as land uses self-organize according to the benefit they stand to gain from proximity to movement, also creating a differential in co-presence that stimulates the phenomenological properties of 'urban buzz' in central places resonant at different scales. Whether space syntax can help us explain retail turnover is a moot point – we are not trying to do that here. What it can help to do is to recast the question of high street sustainability, mixed use and diversity in a different light and one more likely, it is argued, to inform on these issues – particularly, on the long-term morphological conditions that can nourish sustainability such that it becomes less abstract and more associated with concrete urban processes. A space syntax approach can help to open the door on the question of urban 'adaptability' currently being pioneered by Howard Davis (2009) in the architectural sense. However his work does not yet go as far as syntax can in relating the building-street interface he does so well, with the broader urban environment.

Drawing on the findings of ongoing interdisciplinary research at UCL this paper seeks to provide an historicized understanding of two suburban centres as particular kinds of material environments characterized by a remarkable degree of persistence over time, and in generic terms a degree of 'diversity' and 'mixed use' can easily be identified. It draws on case studies of two suburbs of Greater London (Surbiton and South Norwood) and exploits a range of historical cartographic sources, historical business directories and contemporary land use surveys in order to provide a succinct longitudinal survey of their high streets and immediately surrounding areas through four successive historical epochs. This framework is then put to work contextualizing space syntax analysis of the local morphology in order to learn about those morphological elements in a centre that have sustained a high degree of non-domestic activity over time. The broader purpose of this paper then, is to provide a much needed empirical test for the narrative of high street decline and in so doing help to identify where other, perhaps currently less coherent 'narratives', may be found. In straightforward terms, we ask: 'to what extent does 'decline' adequately describe the historical changes in land uses in and around high streets, how far can spatial morphology explain the historical pattern and to what extent must we look elsewhere for our explanation?'

RESEARCH METHODOLOGY AND CASE STUDY AREAS

The case studies selected for this paper, Surbiton and South Norwood, are both Victorian

railway suburbs in South London. South Norwood developed on the back of a mid-nineteenth-century railway development adjacent to the major road between Croydon and London, with the high street running along the Croydon Road. The growth of Surbiton was also due to the arrival of the railway in the mid 1900s but, having been banished from nearby Kingston, it was a greenfield development, with the high street a planned extension from the historical road network running between London and the south of England. They have been selected as contrasting morphological examples of high streets with distinctive demographic profiles. While Surbiton is broadly affluent and archetypal 'suburban', South Norwood is rather more urban and with a wider demographic profile (for morphological histories see Griffiths *et al* 2010). A comparison of the two contrasting examples should help identify any common morphological aspects that distinguish the town centre, taken to refer to the extended 'active' and 'live' areas concentrated around the main high street, in contrast to their mainly residential hinterlands.

The research in this paper draws on a longitudinal dataset of land-use data corresponding to historical maps for the following approximate periods: c. 1875, c.1915, 1956 and 2013. In the case of the contemporary data, primary survey data were used, whilst for the three historic periods of c.1875, c.1915 and c.1960, archival copies of business directories of the time were used to capture the detailed uses at the time². All four periods used the same broad groups: community services (e.g. church or town hall); manufacturing (workshops and factories); offices and commercial; retail; and 'third space' (pubs, cafes and hotels). 'Third space' refers to those semi-public spaces between home and work including pubs and cafés where people can meet and socialize (Oldenburg 1997). Use of this classification is not intended to imply a definitive category but rather to deploy it with caution to investigate the extent to which the land uses on the high street might have to do with establishing 'sociability'. At such a meta-level such a classification can only be anachronistic and inevitably raises problems of over simplification, if not error. For example the combination of many retail and craft-based industrial and commercial practices in the past are here both considered in the single retail category.

The land-use data have been matched to the nearest available historical Ordnance Survey map and then georeferenced in a GIS platform. A new digitization technique (Dhanani & Jeevendrampillai, 2012) has enabled the individual building plots to be digitized for each period and land uses to be assigned to individual building plots on the basis of detailed work by project researchers with local knowledge.³ All land-uses in this paper pertain to ground-floor uses only, reflecting the limitations of the historical data but also simplifying the task of assigning a single land use to a building plot – necessarily something of an artifice. A parallel process of syntactical analysis in segment-angular mode, involving reconstruction of the historical road networks from the historical maps has been carried out to permit analysis at up to a 3km metric radius from the town centre area centred around a 'comparative boundary' where the maximum land-use data is available in all three historical periods. The *Adaptable Suburbs* project is currently trialling the best way to assign syntactical values to the land-use data with a GIS-based algorithm and this paper represents an initial attempt to use this data. Through an analysis of changes in land use over time in the two case study centres, firstly through visualizing these land uses as density properties of the street network and then by considering historical trends in land uses, both in themselves and in relation to building plot metrics, it is hoped to achieve a detailed longitudinal description of patterns of change and continuity on an around the high streets. Secondly, a syntactical analysis seeks to establish whether junction-to-junction street sections with high non-domestic land use are syntactically distinguishable at different radii up to 3km from lower density and residential segments and whether this pattern changes over time. There is an obvious echo here of Hillier's (2009) work on 'spatial sustainability' although with a greater emphasis on the historical dimension – the implications of this study for Hillier's work will be discussed in the conclusion.

² Business directories available from Local Studies Libraries in the London boroughs of Croydon and Kingston-upon-Thames

³ Ashley Dhanani, David Jeevendrampillai, Ruthie Carlisle, Nikolina Nikolova, Patrick Rickles

S Griffiths, A Dhanani, C Ellul, M Haklay, D Jeevendrampillai, N Nikolova, P Rickles & L Vaughan:
Using space syntax and historical land-use data to interrogate narratives of high street 'decline'
in two Greater London suburbs

Non-domestic use densities in two suburbs

Non-domestic use densities (densities, in short) are a useful measure that allow the extent of such land-uses to be mapped to the street-network as a ratio of the length of the road section. In order to reform and join together the fragmented road segments created by the GIS-derived road centreline map, 'junction-to-junction sections' (in short, junction segments) were created from all segment lengths of the network situated between road junctions. Junction segments (Figure 1b) were produced from the polylines as represented in Figure 1a.

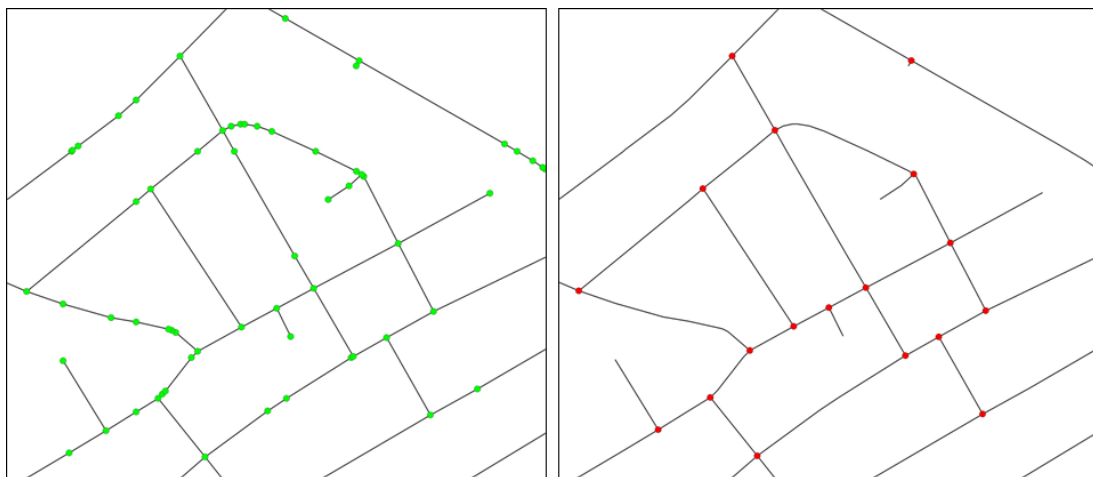


Figure 1: the production of junction segments from polylines

Following *Depthmap* analysis of the segment map for the centres (see Dhanani *et al* 2012; Turner 2007), segment-angular values for appropriate space syntax metrics of choice and integration were then assigned to the junction segments, as averages where necessary, although in a majority of cases the syntactic segment and junction segments are equivalent. The composite 'segment junction' units are intended to produce intuitive representations of town centre spatial morphology, for which density calculations of the extent of non-domestic (residential) activity by junction segment, in each suburban centre over time, could be made.

South Norwood

Figure 2(a-d) presents the non-domestic densities for streets within the comparative boundary for four epochs 1869, 1915, 1956 and 2013 in the history of South Norwood. The relative non-domestic densities of junction segments in the centre are grouped into four equal quartiles and coloured from black (high density) to light grey (low density) on the street network. The building plots with land-uses are similarly represented from black to light grey depending on the non-domestic density of their junction segment. For the present purposes differentiating between the ranges of land uses is less important than making some preliminary observations about the pattern of change and continuity over time. Restricting ourselves then to three *prima facie* observations we can note that (a) the pattern of non-domestic densities has remained remarkably consistent over time, intensifying from 1869-1915, although with some evidence of de-densification along the north-south road (Portland Road) in 2013; (b) that there is a steady increase in land-uses just off the densest streets since 1869 and (c) that there is little non-domestic density across the whole period in the road section connecting the high street (east-west) to Portland Road. This section of street, which is crossed by a railway bridge, has little architectural capacity to support non-domestic or domestic uses along its length. Overall, there is a fairly constant presence of non-domestic densities across the period. In itself, of course, such evidence is not enough to dismiss concerns about the historical decline of the high street. However, such longitudinal analysis as this is sufficient *prima facie* to reveal any glib assumption of 'decline' as incorrect and highly normative – i.e. selecting particular aspects of a phenomenon to focus on rather than taking a more rounded view. It suggests how the narrative

of decline must be justified within a broader historical picture of high street endurance.



Figure 2: non-domestic densities in South Norwood, London, in four historical periods

Surbiton

A broadly similar picture of historical resilience emerges from the non-domestic density analysis of Surbiton (Figure 3 (a-d)). Here the Figures present a picture of continual densification of non-domestic uses across the period – extending in the early twentieth-century so that non-domestic uses define a continual area from the west of the high street to the south of Brighton Road (The ‘L’ shape on the map). If the high street is considered over the long-term as a historically resilient aspect of urban morphology then this analysis does not justify the unqualified doom-mongering of some commentators, especially those focusing on larger retailers. On the contrary, the analysis provides baseline evidence for the emergent historical-morphological properties of suburban high streets to sustain land uses in very different historical epochs across some 150 years.

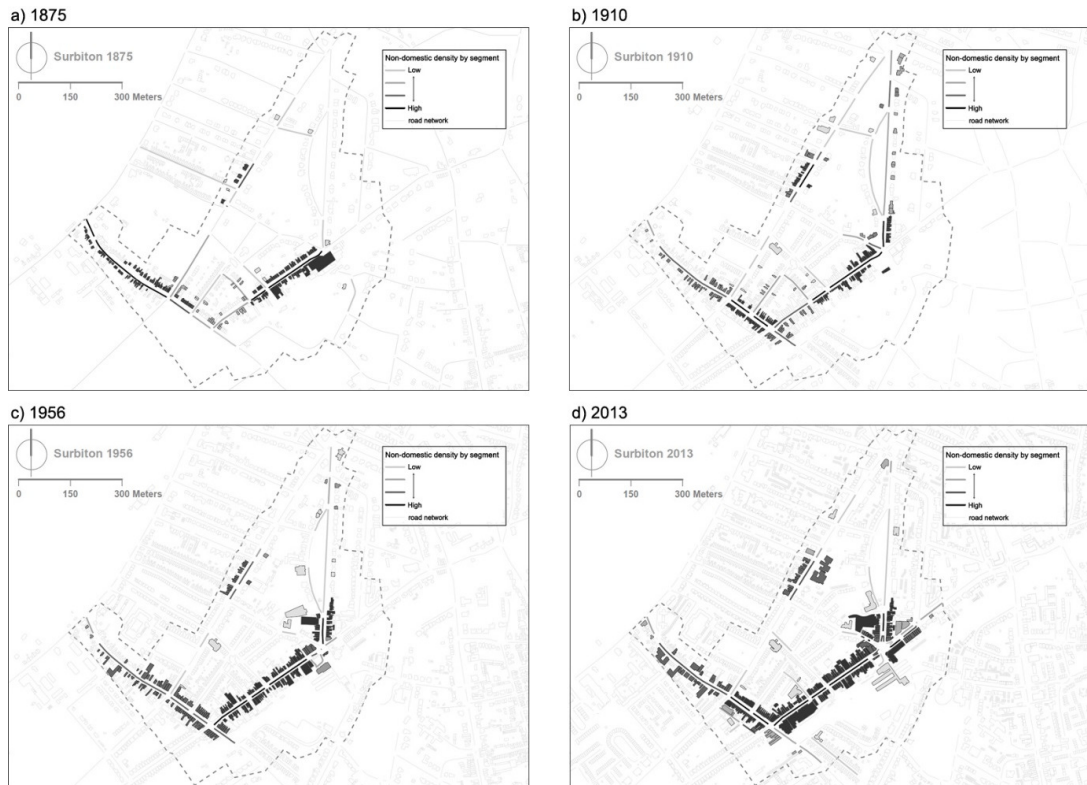


Figure 3: Non-domestic densities in Surbiton, London in four historical periods

The morphological picture of non-domestic densities in South Norwood and Surbiton presented in Figures 2 & 3 is developed in the land-use analysis in Figures 4-6, which provide a more detailed breakdown of the land-use data. Figure 4 presents this data simply in terms of the number of land-use addresses in each suburb. It is clear that in both suburbs retail has clearly declined relatively by 2013, in South Norwood steeply. Yet in Surbiton this is largely offset by an increase in the office and commercial uses (including professional services) and in the ‘third place’ category. In South Norwood there is no equivalent offset although there is a notable increase in third place and an upturn in office and commercial activity. Community services also show an increase while manufacturing is, perhaps unsurprisingly, down – although it is worth noting that there *is* still a small manufacturing presence in both centres.

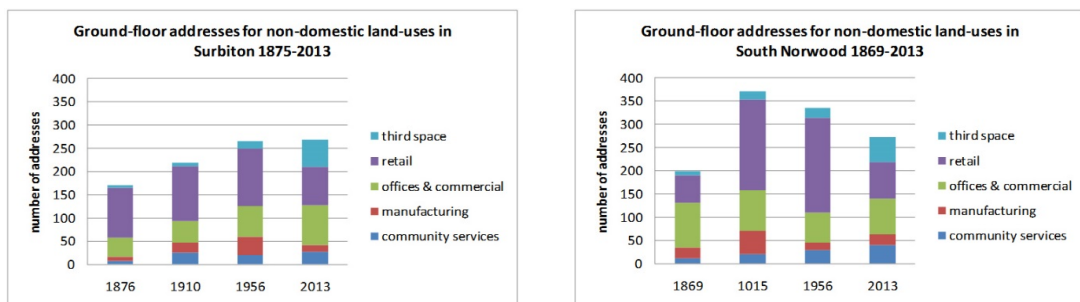


Figure 4: ground floor addresses of non-domestic land-uses in Surbiton and South Norwood over time

The same data represented according to the ground-floor area of the different land-use categories presents a slightly different picture. Figure 5(a-b), which shows the average size of the ground floor building plot of each land use indicates that the average plot size is getting larger over time. This is largely accounted for by the increased floor space required by major players in the retail sector and especially community services, where institutional uses, often just away from the main high street, might be expected to occupy larger premises. If the total ground floor area rather than the average is considered (c-d) then the relative size of the retail

and manufacturing sectors in Surbiton in 2013 are shown to be clearly divergent – notably all other categories show a marked increase over time, and steeply in the period from 1956-2013. Again the picture is rather more mixed in South Norwood with community services showing the most marked increase over time, while retail has declined over the last period. However, manufacturing, third place, and office and commercial usages are all increasing, albeit at a lower level.

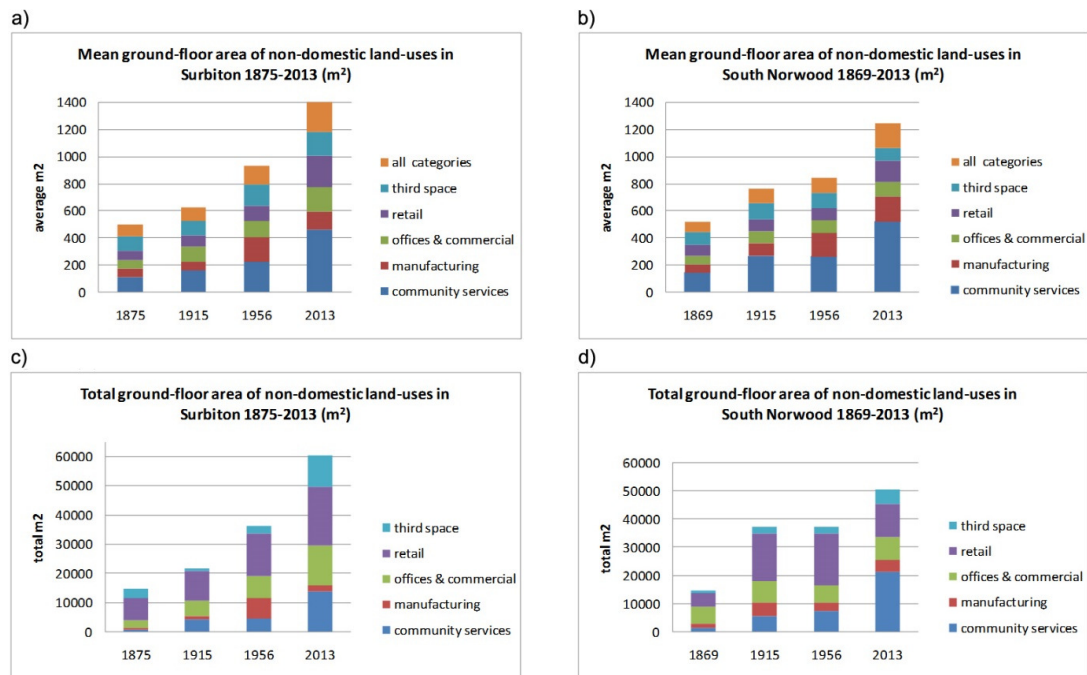


Figure 5: Mean and total ground-floor area of non-domestic land-uses in Surbiton and South Norwood over time

This analysis conclusively shows that despite the perception that small town centres are reliant on retail for their long-term success, retail has rarely been even the *majority* activity by any measure in the cases studied here. It is therefore legitimate to pose the question of the interdependence or synergy between retail and other town centre activities: community services, manufacturing, offices and commerce, as well as cafes and other ‘third place’ activities – all of which collectively contribute to the vitality of town centres and have had varying degrees of presence in and around the high street for a significant length of time. The data presented in Figures 1-5 also raise more general questions about any account of the ‘health’ of high streets that restricts itself to a single dimension. Even a straightforward analysis in terms of changing land use and non-domestic densities suggests a picture that is a good deal more complex than such an account would suggest. The analysis also presents how an account of non-domestic density that goes beyond what may be regarded as the ‘main drag’ of the high street to consider its immediate environs – begging the important (morphological) question of the relationship between the two. Such questions matter because it is when planners and policy makers lose sight of the emergent (i.e. temporalized) complexity of the relationship between the material environment and socio-economic activity that inappropriate, one-size-fits all, strategies to town centre regeneration stand to gain most credence.

Configurational analysis of town centre transformation

The configurational analysis was designed to enquire whether those elements of the street network associated with high non-domestic density displayed discernable syntactical properties in terms of segment-angular choice and integration analysis. This in turn raised the question of whether high density areas of the street network tended to become notably more or less differentiated over time as the centres grew and whether they differed configurationally from

low density streets and streets with purely residential activity. Our initial thinking was that one would expect any differentiation to become more pronounced over time. As explained in Section 2, in order to have a variable independent from contemporary planning definition of what constitutes a town centre, namely a self-fulfilling focus on the peak retail and office uses, all non-domestic uses were captured within a comparative boundary for four time periods. The density of non-domestic activities within a single junction segment was calculated, taking account of all available addresses in that space and then assigned space syntax measures: a) angular segment segment-length weighted choice to account for the utilisation of a road centre-line network model and b) angular segment integration. These were calculated for all radii up to 3000 as well as n (Dhanani 2012; Turner 2005). In this analysis we focus on 800m, 1600m, 2000m and 3000m radii.

The analysis in this section considers junction segments as explained in Section 2, according to their relative concentration of town centre activity (visualized in Figures 2 & 3). Junction segments were classified according to four equal quartiles of non-domestic activity from high, medium-high, medium-low to low and a fifth class was assigned to junction segments with purely residential activity, but adjacent to any segment with median or above non-domestic activity. The latter class was defined in order to see if there were any discernable syntactical properties to the immediate residential hinterland of each of the town centres. The remaining junction segments (which were mostly domestic, but might include non-domestic activity outside of the study area) formed a sixth class. The findings of this analysis were striking (Table 1). In both cases and throughout the four periods – despite the differences between the two cases - the two groups of highest density activity were consistently and significantly greater in their mean average integration and choice, whilst the lower two quartiles were generally lower than average in their choice values, but greater than average (albeit not significantly so) for integration at all scales tested. The junction segments with purely residential activity lying adjacent to the high density segments were consistently and statistically significantly greater than average in their integration values, but not for choice. Indeed, in many cases they were higher than the two lower quartiles of density⁴.

These findings point to an important difference in the way in which the town centre activity corresponds to spatial configuration. It suggests that whilst integration at all scales is vital for a centre's continuation over time, both for peak and lower density activity, choice only corresponds to the top bands density of 50-100%. We believe that this is the first confirmation of Hillier and colleagues' longstanding contention that choice predicts retail activity, given that retail is generally at its greatest concentration where other town centre activities are present (Hillier 2009a; b; c). Contrariwise, it indicates that lower densities may possess spatial logic that merits further investigation. Of course, we are aware that this finding could be partly an artefact of restricting the analysis of land-uses to the comparative boundary, yet in both centres the areas extend to a wide area around the peak town centre use that is typically the focus of morphological studies⁵. Ongoing research will examine a range of catchment areas from the peak town centre activity in order to provide an additional longitudinal analysis of this phenomenon. As things stand it is somewhat surprising to find that there are no pronounced changes in the pattern indicated in Table 1 over time but what the analysis does very clearly show is that choice is a predictor primarily for high density town centre activity. This generalized analysis of non-domestic densities warrants further exploration to consider different types of town centre activity separately in order to determine whether there are any shifts in the spatial configuration of the different land uses over time, given that the literature would suggest that 'high streets' (i.e. peak town centre activity) would tend become more focused over time and more pronounced in its spatial differences from its hinterland.

⁴ Note number of junction segments increases in each time period as the area becomes more developed. The number of town centre junction segments increases in line with this by the second period, but despite a doubling again by 1960, the actual number of junction segments actually decreases slightly by 5, reflecting a small amount of consolidation across the board. In contrast, by 2013, whilst there has been a further 50% increase in the number of junction segments, this has gone hand-in-hand with a commensurate increase in town centre coverage.

⁵ The comparative boundary in South Norwood covers 329,213 sqm. and in Surbiton, 448,193 sqm.

Table 1: analysis of changing spatial values over time. The table indicates with a star if average spatial value is statistically significantly higher than average ($p < .05$)

Year	CS	M	OC	R	TS	CS	M	OC	R	TS	CS	M	OC	R	TS	CS	M	OC	R	TS	CS	M	OC	R	TS
1880	*	*	*	*	*																				
1910	*	*	*	*	*																				
1960	*	*	*	*	*																				
2013	*	*	*	*	*																				

Figures 6 and 7 show bar charts for the four periods expressing the relative weighting of each land uses within junction segments⁶. It is evident in both South Norwood (Figure 6) and Surbiton (Figure 7) that the concentration of each land use in the top two quartiles increases over time. This is particularly the case with offices and commercial activities (OC) and retail (R) and to a lesser degree for ‘third space’ type activities too (TS). So whilst the town centres’ extents have in fact increased over time (as it also evident from the total number of junction segments overall, given in Table 1) the land uses with the highest footfall have measurably focused themselves in the higher density and higher centrality segment-junctions over time.

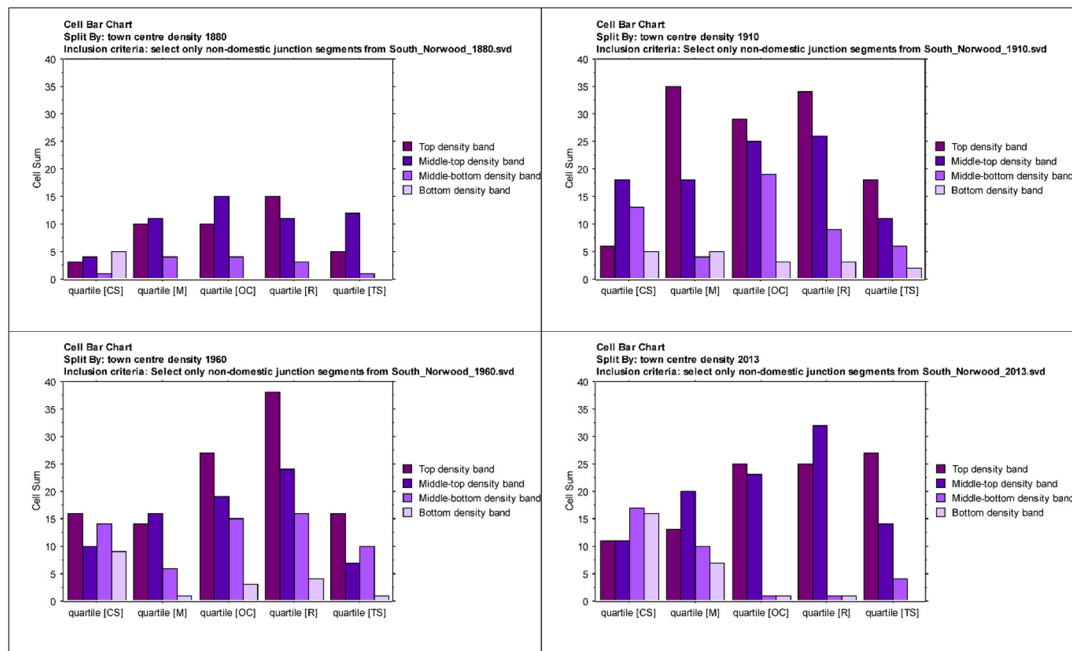


Figure 6: bar charts of weighted counts of land uses over time in South Norwood

⁶ For each land use: 0 was assigned to any junction segments with no businesses with that use; 1 = for the bottom quartile of that business; 2 = bottom-middle quartile; 3 = middle-top quartile; 4 = top quartile). The sum bars are therefore higher if that land use exists in greater quantities in the segments within that density quartile. The scale has been fixed to enable cross-comparison.

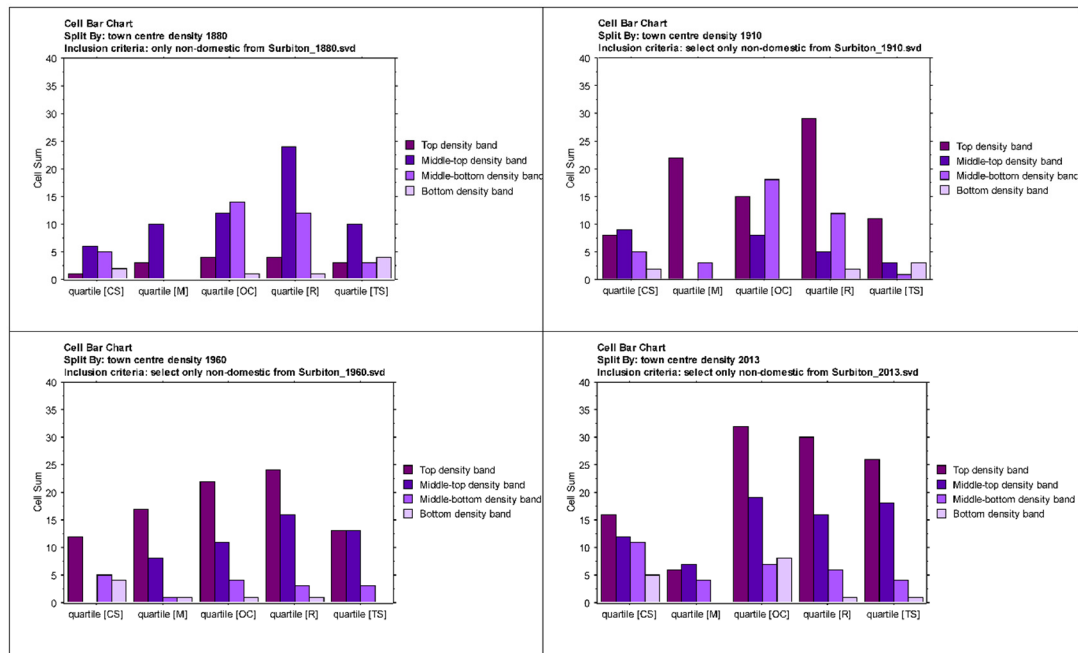


Figure 7 bar charts of weighted counts of land uses over time in Surbiton

These findings add further confirmation for our earlier work (Vaughan et al 2010) that proposed that - particularly in smaller centres - the ‘active’ town centre is a distinctive social-morphological entity in its own right, which provides for the long-term success of such centres. We showed there and further confirmed here that exclusive focus on the ‘live centre’ and its retail and office activities tends to overlook the question of synergy between all non-domestic land uses.

Conclusion

Against the tide of opinion that unhesitatingly assumes that the challenges facing the retail sector equate to the ‘death of the high street’, this paper provides concrete evidence to the contrary. We have shown that *retail was never a majority activity, even in the supposed heyday of the 1950s*. Rather than focus more or less exclusively on retail therefore, this research bears out the project’s central proposition – that there is a necessary interdependence between retail and other town centre activities: community services, manufacturing, offices and commerce and manufacturing, as well as cafés and other ‘third space’ activities – all of which collectively contribute to the vitality of town centres. It is the ability to support this synergy of diverse land uses that should be a key focus of research – and this naturally leads to a consideration of the role of the urban-architectural morphology of the high street in enabling such synergies to emerge and adapt (and decline). Put another way - we need to understand the evolution of the historical high street in the context of its hinterland, a complex system with manifold possibilities for adaptation – not simply as a ‘small hub’ or attractor that will inevitably be succeeded by a larger one. This is seriously reductionist thinking.

A recent report by the UK government Department for Business, Innovation and Skills on Understanding High Street Performance argues for a ‘21st century agora’, with the high street becoming a “multifunctional destination, with retail playing a part alongside community, public service, leisure, cultural and civic uses.” (DBI&S 2011, xi). The report affirms the emphasis on achieving a synergy of uses, stating that:

...non-commercial activity is missing from current assessments of high street activity. The presence of a Citizen’s Advice Bureau or library can be as important in drawing footfall as a café or fashion store; the use of buildings as student accommodation could indicate a

viable market in convenience shopping. (xv).

The research presented here suggests how multi-functionality sustains adaptability over time: it follows that resilience will be much greater if a centre is not reliant on just one form of activity. The paper also proposes that a distinguishing feature of traditional high street morphologies is not simply the nostalgic vision of 'mixed uses' but rather that 'mixing uses' is what the spatial morphologies of high streets, embedded in their hinterlands are particularly good at achieving – whatever this might mean in different historical periods. Fortunately, the tide seems to be turning on this point with both government agencies and major design consultancies taking note. A recent report in the Huffington Post quotes a consultant on Arup's foresight and innovation team as saying "there needs to be a move away from thinking high streets are just about shopping".⁷ Yet it is quite one thing to think it and quite another to know *why* this should be the case. Understanding more about how the movement economy operates in different social and historical-geographical contexts is necessary to help local policy-makers and investors to make better decisions to support its aptitude for 'mixing'. An historical perspective on this process can help in showing how the high street, even retail on the high street, is not one thing, but many things.

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⁷ http://www.huffingtonpost.co.uk/2013/01/18/future-of-british-high-st_n_2505566.html [accessed 5/6/13]

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