Provan, K. G., & Kenis, P. (2008). Modes of network governance: Structure, management, and effectiveness. Journal of Public Administration Research and Theory, 18(2), 229-252.

Putnam, R. D. (1993). The prosperous community. The American Prospect, 4(13), 35-42.

Putnam, R. D. (2000). Bowling alone: America's declining social capital. Culture and politics (pp. 223-234) Springer.

Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. Policy Sciences, 4(2), 155-169.

Scholten, P., Bressers, M. N., & Edelenbos, J. (2013). Water governance as connective capacity Ashgate Publishing, Ltd.

Teisman, G. R. (2000). Models for research into decision-making processes: On phases, streams and decision-making rounds. Public Administration, 78(4), 937-956.

Thompson, S., & Kent, J. (2014). Connecting and strengthening communities in places for health and well-being. Australian Planner, 51(3), 260-271. doi:10.1080/07293682.2013.837832

Van Hulst, M., de Graaf, L., & van den Brink, G. (2012). The work of exemplary practitioners in neighborhood governance. Critical Policy Studies, 6(4), 434-451.

van Meerkerk, I., & Edelenbos, J. (2012). The effects of boundary spanners on trust and performance of urban governance networks

Wagenaar, H. (2007). Governance, complexity, and democratic participation. The American Review of Public Administration, 37(1), 17-50. doi:10.1177/0275074006296208

Welter, V. M., & Geddes, B. P. (2002). The city of life.

Williams, P. (2011). The life and times of the boundary spanner. Journal of Integrated Care, 19(3), 26-33.

Williams, P. (2012). Collaboration in public policy and practice: Perspectives on boundary spanners Policy Press.

Yip, J., Ernst, C., & Campbell, M. (2009). Boundary spanning leadership: Mission critical perspectives from the executive suite.

ID 1364 | REACHING FOR SIMPLICITY; CITIZEN PARTICIPATION, COMPLEXITY THEORY AND THE TRANSPORT MEGAPROJECT

Jo Phillips[1]
[1]Manchester Metropolitan University
joanne.phillips@stu.mmu.ac.uk

1 INTRODUCTION; COMPLEXITY THEORY AND LANDSCAPE RESEARCH

> *"I would not give a fig for the simplicity on this side of complexity; I would give my right arm for the simplicity on the far side of complexity" Oliver Wendell-Holmes Jr.*

At every stage in a research project an academic is faced with the problem of acknowledging complexity, attempting to process its implications and reaching for the elusive simplicity that we hope exists on the far side. For a researcher in the field of landscape architecture this is a particularly pressing problem, due to the nature of the landscape itself as a complex emergent system. My PhD is a participatory research project, which aspires to acknowledge the role of all participants in this system as "researchers, as agents of change, and as co-constructors of landscape knowledge" (Deming and Swaffield, 2011: 202). So, in studying the implications of complexity theory for public engagement with a transport megaproject, what glimpses might there be of simple solutions?

Complexity theory can help us to comprehend the nature of landscape, its problems and their possible solutions, because it offers a way of understanding how landscape works. It gives us the perspective of 'emergence', from which we can aspire to conceptualise the landscape in a pragmatic way. The term 'emergence', in the technical sense used by complexity theorists, was coined by English philosopher G.H.

Lewes (Goldstein, 1999: 53). Lewes' definition is pithy: "The emergent is unlike its components insofar as these are incommensurable, and it cannot be reduced to their sum or their difference" (1875). Steven Johnson's illustration of the concept expands upon this. He describes a number of different emergent systems in animals, humans and computing. He uses the example of studies of slime mould (Dictyostelium discoideum), beginning with the work of microbiologist Evelyn Keller from 1968 onwards (Johnson, 2001). He describes the apparent simplicity of slime moulds, which are, during the winter, independent single-celled amoeba-like organisms. However, under the conditions of a temperate summer the individuals "coalesce in to a single, larger organism which begins its leisurely crawl across the garden floor, consuming rotting wood and leaves as it moves about" (Johnson, 2001:13). For thirty years this phenomenon was not understood, as scientists believed the behaviour must be instigated and controlled by 'pacemaker' cells, but such cells could not be found. Only in recent years has there been an agreement that "slime mould aggregation is now recognized as a classic study in bottom-up behaviour"(Johnson, 2001:16). In other words, it is self-organizing, a complex adaptive system that illustrates the nature of emergence: "the movement from low-level rules to higher-level sophistication is what we call emergence."(Johnson, 2001:18).

In the slime mould therefore, its aggregated manifestation is far more than the sum of its individual cells and as such its form and behaviour could not be predicted from knowledge of the initial circumstances, the constituent cells and the basic known laws, for example of physics and chemistry, that apply to them. Substitute the word 'components' for 'cells' and you have a description of how landscape works. Goldstein's definition of emergence supports this understanding, as he says that it is: "the arising of novel and coherent structures, patterns, and properties during the process of self-organization in complex systems. Emergent phenomena are conceptualized as occurring on the macro level, in contrast to the micro-level components and processes out of which they arise."(Goldstein, 1999 :40).

This is arguably an accurate description of any landscape, rural or urban, in any part of the world. Some, such as a river delta, may be more apparently emergent, from the point of view of the human observer. The basic components of the delta are known and understood in that scientific knowledge informs us as to the nature and behaviour of water molecules, as well as about the nature and processes of the soils of the delta. However, it is not possible to accurately predict the branching of the river and overall form of the delta landscape from this knowledge.

For Goldstein, then, emergent phenomena are 'coherent'. This view is one shared by British landscape architect and author Simon Bell. In his influential book 'Landscape, Pattern, Perception and Process' Bell states he is influenced by chaos theory and emergence but states that "the changing world is neither chaotic nor unpredictable"(Bell, 1999: 5). He wishes to see "the fundamental natural order in the world"(Bell, 1999: 8) and claims that "irregular effects on process and pattern can be mistaken for randomness, but belie a deep order" (Bell, 1999: 35). Emergence is not a theory of randomness, and it operates in an essentially coherent manner, in that emergent phenomena arise out of the normal operation of known rules or scientific 'laws'. An acceptance of the unpredictability of the resulting landscape forms and processes is, however, central. Many examples could be cited of unpredictable landscape events, such as erupting volcanoes, landslides, floods, forest fires or sudden rapid growth of shanty towns, which arise from the nature of the component systems of those landscapes.

In recent years landscape architecture has arguably begun to draw on emergence theory through its links with the field of ecology. Ecologist William Holland Drury Jr. wrote of the problems associated with "clinging to romantic notions of nature's grand design" (Drury, 1998: 1-2) and the misguided rhetoric of "nature's balance" (Drury, 1998: 5). In contrast to Bell, he emphasises that the "first principle is that chance and change are the rule" (Drury, 1998: 6). Drury traces back some of the influences over our tendency to look for 'balance' and equilibrium in ecosystems to Linnaeus' essay of 1749; "The Economy of Nature". Linnaeus' system of classifying living things and allocating to them a standard globally applicable scientific name using 'genus' and 'species' is common to many specialisms today, and pertinent in this case as landscape architects will have gained their understanding of plant and animal species from ecologists and horticulturalists who depend on the Linnaean taxonomy of Kingdom, Phylum, Class, Order, Family, Genus and Species. For Drury, "Linnaeus's system carries a profound subliminal message: that each species was created as it is." (Drury, 1998: 16). Drury's lifetime of experience and observation, however, suggest that species cannot be so easily distinguished; "I remember my botany professor searching over a hillside covered with individual plants of a particular species until he found a "perfect" representative of the variety he had in mind. His comment when he finally found the right specimen was that this individual was

"typical"." (Drury, 1998: 17). This anecdote reminds us of exactly the problem/opportunity of emergence; that as we can never truly state what the precise characteristics of any species are, it is untenable to subscribe to an essentially fixed view of nature. This observation directly addresses a key proposition of emergence theory, summarised as follows by leading thinker in the landscape field, landscape architect Rod Barnett: "the real processes, objects and relations that comprise the world and which landscape architecture undertakes to design, organize and manage, are continually unfolding, producing further relations and making new connections." (Barnett, 2013: 4-5). Thus, as a species of wildflower evolves so do its pollinators, these changes in turn influence the wider ecological systems of insect predation, soil and vegetation patterns. All of these systems are open to each other and ultimately to every other system in the landscape, be it climate, hydrology or human society.

In 2008 ecologist and landscape architect Frederick Steiner offered this definition of landscape: "A landscape is more than a picturesque view; it is the sum of the parts that can be seen, the layers and intersections of time and culture that comprise a place – a natural and cultural palimpsest." (Steiner, 2008: 4).

This description of the structural qualities of landscape and acknowledgement of the interplay of layers of physical objects, human systems, natural processes and the passing of time, is true to the landscape architect's view of landscape that persists for the most part to the present moment, but the publication in 2013 of Barnett's 'Emergence in Landscape Architecture' marks a significant move by the academic establishment away from Steiner's definition and towards a qualitatively different understanding, which has real and potentially revolutionary implications for practice. Barnett repeatedly reminds us that "Open systems are complex...their components are connected by networks of feedback loops operating at different levels, different scales and different rhythms. Landscapes work like this." (Barnett, 2013:49-50). In accordance with Barnett, this paper takes landscape to be an emergent, non-linear and open system. In order to illustrate this position, emergence theory will be applied to a brief description of the rural parish of Ashley, near Manchester, England, which is due to be the site of construction of high speed rail infrastructure in approximately 2030.

2 UNDERSTANDING THE PROBLEM

HS2 is the UK's proposed high speed rail network. Due to begin on site in the south of England in 2017, it has much in common with transport megaprojects the world over. It has a long linear site, the boundaries of which are subjective and indefinite. It poses questions about how the identity of the infrastructure at a local scale nests within the national scale. There are problems of compulsory purchase, very substantial land take and large numbers of residents affected by proposals. Running the project are hundreds of people from different disciplines, including designers, planners, engineers, ecologists, archaeologists, politicians and public engagement professionals, who are led by changing governments (for HS2, four prime ministers within five different governments to date). Multiple cascading effects begin before work starts on site, within a landscape that is already complex and emergent, with its own flood events, road building programmes, imminent housing developments and so on. A new railway line, therefore, has impacts apart from its physical presence, as it traverses the countryside between major cities it has significant effects on human psychology, social networks and economies as well as on views, road networks, hydrology and all other ecological systems. There is, arguably, nothing along the proposed alignment of such projects that remains unaffected during the phases of anticipation, construction and post-completion.

For local landscapes, the risk is that the result will be "universal low-density mess." (Nairn,1955: 363). Nairn was writing in a special edition of the Archtitectural Review, in which he describes a journey from Southampton to Carlisle. His concern is the sameness that he encounters at different locations on the journey, and the likelihood that, by the end of the twentieth century "there will be no real distinction between town and country" (Nairn, 1955: 365). Such erosion of distinctive local character is at least as pressing an issue now as it was in 1955, and it is not clear that HS2 will make any positive impact on the problem.

The above considerations suggest why complexity theory is relevant here. This body of thought leads us to begin to understand landscape at every scale as an emergent entity, in that the continuously evolving whole is greater than the sum of its parts and comprised of a limitless number of interacting open systems.

It is “a continuum of multiplicities continually self-differentiating” (Barnett, 2013:44). Compare the fluidity of this landscape condition with the operation of many public engagement exercises, which attempt to operate within a complex emergent field and yet themselves are inflexible, top-down ‘snapshots’ of public opinion. Such processes tend to start too late, finish too early and be determined by adherence to statutory requirements rather than motivated by a desire to access the expertise held by citizens about their local landscapes. HS2 Ltd plan to “engage with communities over the life of the project” (HS2 Ltd, 2015: 9), such that “national pride in the system is matched by a sense of local ownership” (HS2 Ltd, 2015: 11), yet an examination of HS2 Ltd’s public engagement processes as enacted on the ground in rural English parishes illustrates some of the inherent problems.

2.1 ASHLEY, COMPLEXITY AND HS2

Ashley is a small parish in rural Cheshire, with Ashley village at its centre. It lies immediately south of Greater Manchester, and the border with the city is formed by the river Bollin. It covers an area of approximately 8.5 square kilometres and has around 325 residents, living in a predominantly agricultural landscape with scattered farmhouses and other dwellings. It has a railway station, The Greyhound pub, St Elizabeth’s church (built 1880) and a cricket club (1888). In the past there have been a village shop, post office, primary school and filling station. These facilities used to contribute to a stronger sense of a village centre, but their continued operation has not been sustainable.

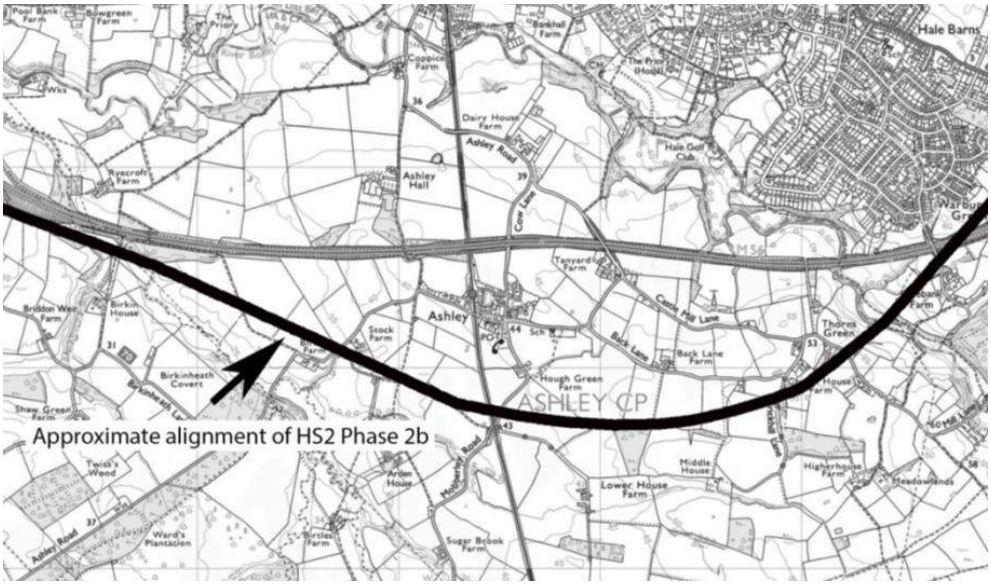

Figure 1. Ashley, Cheshire (author’s own image, base map from digimap.edina.ac.uk)

Ashley was chosen for study because it is already the site of significant linear transport infrastructure projects (see Error! Reference source not found.). The railway line of 1863 bisects the village, running on a north-south alignment. The M56 motorway divides the parish west to east. Runway two of Manchester Airport is a significant presence in the landscape, lying very close to the Parish’s southeastern boundary, and the proposed HS2 alignment isolates Ashley village between the new line and the M56. This research is concerned with the potential cumulative effects of these infrastructures. The motorway is a significant presence in Ashley, through noise and air pollution from vehicles, visual impact of the structure and associated gantries, and traffic flow to and from junctions. In winter, motorway traffic is clearly visible and audible from places in the village, for example the churchyard. The Victorian railway line has less impact both visually and in terms of noise, but still presents a physical landscape barrier. Large-scale transport infrastructures therefore contribute to an erosion of the clarity of Ashley’s rural character, whilst research data shows that residents still feel strongly that theirs is a rural place that is rich in wildlife and natural beauty.

Central to conceiving of the landscape of Ashley is recognition that, like all landscapes, it is undergoing a constant process of change and development, and will continue to do so. There are obvious changes marked on the landscape itself, visible to the eye and in later years recorded by cartographers; the building

of roads, the demolition of houses and enclosures of agricultural land, for example. Less visible but still identifiable are changes in occupation patterns by plant species, demographic changes and climatic shifts. Impossible to comprehensively observe and quantify, further changes continually occur; rhizomatic fungal growth in the topsoil at Stock Farm, fluvial deposition from the River Bollin, changes in the emotional states of drinkers at the bar of The Greyhound. Thus, the place has never 'become', it is simply always 'becoming'. This way of seeing stands in contrast to careless perceptions of timeless, unchanging rural landscapes. In the case of Ashley, we are alerted to the fact that conditions at any given moment are never fixed so must not be idealised; likewise its future is not mappable in the sense of factual prediction, but only as an imaginative projection of the future.

Essential to accepting that landscape is emergent is the concomitant notion that it is an open system. The loops and branches of its constituent processes are not separable and always open to being affected by other systems. Within the boundaries (real only to people) of the Civil Parish of Ashley it is possible to make measurements of air quality, but it is not meaningful to study this in isolation from the air quality of Manchester, or the northwest region. Likewise one could study aquatic species in the Bollin, but never in isolation from the effects of conditions upstream, in the wider catchment and in the entirety of the hydrological cycle. Barnett explains the effects of this view on our thinking as landscape architects; "A landscape has no outside, for its connectivity to other multiplicities is always complete." (Barnett, 2013: 52). This is an essential acknowledgement that site boundaries, or in this case the entirely arbitrary parish boundary, absolutely cannot be considered to be the true 'edge' of a site; "A landscape is only and always an ecotone, an edge, a continuous immanent spatiality." (Barnett, 2013: 52).

In Ashley, then, landscape architects (and, for that matter, planners or civil engineers) can in no way consider themselves to be external to the site or in control of its future. Each person is indivisible from the site; "In my capacity as an effect, an event, a component of the assemblage that is arranging around me, I am inseparable from the hour, the season, the air, the street, the 'weeds' in the cracks of the paving. I am always in composition with the landscape I am connecting to." (Barnett, 2013: 52).

Such concepts of landscape are not new. In his poem of 1731, 'Epistle IV, To Richard Boyle' Alexander Pope gives his advice to a landscape designer about the role of the 'genius of place', which we would also call 'spirit of place' or 'Genius Loci';

> *"Consult the Genius of the place in all;*
> *That tells the waters or to rise, or fall;*
> *Or helps th'ambitious hill the heav'ns to scale,*
> *Or scoops in circling theatres the vale...*
> *Now breaks, or now directs, th'intending lines;*
> *Paints as you plant, and, as you work, designs."*

Here, Pope casts the 'Genius' as the power of the landscape itself, which exerts its agency through controlling rising and falling waters, the making of mountains and valleys. In this verse, it very much has intentionality, as it directs visual elements or 'lines' in the landscape, and as 'you' toil away in your humble role of planting, it paints the wider scene and designs the world around you. In this particular poem, the designer is incidental to the wider system or network of the landscape, which never ceases to design itself.

2.2 PHASE TRANSITION AND CASCADING LAND DEVELOPMENT

To inhabitants of Ashley, a landscape meshed in the protections of green belt policy, the constant change inherent in the landscape may seem incremental, continuous and not especially momentous. Things do develop, but the scene is much the same and the various actors broadly similar. However, complexity theory illustrates the nature of change such that we can understand how, in apparently stable and constant conditions, revolutionary developments can occur. Roger Lewin calls such an event a 'phase transition' and uses the example of the point at which life on Earth changed from being contained entirely in single-celled organisms, to the advent of multi-cellular organisms. He says that for 3 billion years on this planet, "the highest form of life was the single cell...it was aeon upon aeon of mind-numbing sameness. Then suddenly, and with spectacular effect, the trick of cellular differentiation and aggregation in to multi-cellular organisms evolved. An explosion of new forms occurred" (Lewin, 1993: 17-18).

Other writers use different terminology to describe the phase transition in a complex system. Per Bak, also writing in the 1990s, cites landscapes as exemplary complex systems (Bak, 1997) and describes how "minor disturbances may lead to events called avalanches, of all sizes. Most of the changes take place through catastrophic events rather than by following a smooth gradual path." (Bak, 1997: 1). Bak's use of 'catastrophic' here denotes a sudden large change rather than a disaster, but it is worth recalling that such 'avalanche' phase transitions can indeed lead to landscape disasters, as for example in multiple flooding events across the world as our climate continues to change.

Rod Barnett uses the term 'bifurcation' as synonymous with 'phase transition'. He points out that, in landscapes, they are not especially unusual, and that, in the normal course of events, "A bifurcation can lead a single system into a distribution that none could have foreseen." (Barnett, 2013: 45). It is this quality that gives landscape the capability "to generate new patterns of organisation"(Barnett, 2013: 28). A very localised example of this would be when a river, such as the Bollin, running through sandy soils, breaks through the banks of a deep meander and forms an ox-bow lake, with the river itself taking a new course, and forming a new boundary between local authority areas, parishes and neighbouring farms. Over the border in to Derbyshire, in a limestone karst landscape, a river might suddenly disappear underground or emerge in a new location as the action of the water exploits gaps in the bedrock, changing the course of the flow. On a larger scale, whole new land masses can be created at sea by deposition of material during storms (reference here), or as a result of volcanic activity. These land forms can and do appear within a matter of hours. Whether the process and its results are perceived by humans to be destructive or constructive, the landscape has the capability to self organise afresh, generating new ecosystems. Such phase transitions could be triggered by the interactions of any number of the many open systems which combine to make up the landscape, for example in the case of a bush-fire in the Australian outback, which could be triggered by a combination of several factors such as a lengthy drought, long-term land management policies and the act of discarding a single cigarette butt.

Consider then, the landscape of Ashley. Its many physical and social systems are intimately connected to each other and influence each other in countless ways. It may seem to the present generation of Ashley residents that, despite the previous construction of transport infrastructures, the essential rural character of the place has not changed much for hundreds of years. This might make it difficult for inhabitants to conceive that it could ever change in any very significant way, and hard to accept that a proposed transport megaproject could soon be built. Many of the ongoing changes to the place have emerged gradually over time and have been prompted by change agents perceived to be from within the parish itself. The Vicar leaves to take up a new post, a farm tenancy ends, a tree blows over in a gale. A potential revolution in the quality of everyday life, caused by political decisions made in Westminster, seems perhaps overly dramatic and unlikely. However, Ashley is a complex adaptive system like any landscape, and the possibility of a phase transition is inherent. A significant flood event, for example, would not be out of the question, given the parish's river boundaries, high water table and existing minor flooding problems. The coming of the HS2 line seems, at the time of writing in spring 2017, to be very likely, albeit in changeable political times. The increased level of complexity brought about by this event, or even just the anticipation of this event, has the potential to tip this landscape in to phase transition, from a rural to an urban condition, as changes in the various open systems of the parish culminate in the removal of its green belt status. This paper, in common with my PhD thesis, uses the term 'cascading development' to describe an emergent process of exponential development of land in a local area where a landscape intervention, such as HS2, makes a change so disruptive that a cascading effect is produced.

Crucially, it is not just the actual construction of the infrastructure that could cause such a phase transition, but a number of other, earlier, related events, for example the first announcement of the alignment of the route, or a visit by HS2 officials to the local area. Even a ten-minute talk given by an academic researcher one evening at St Elizabeth's Church, or an hour's walk through the countryside for research purposes, could likewise tip the balance of the system in to a new phase through the butterfly effect, as described by Lewin (1993) and now in common use.

Figure 2 indicates just one possible scenario for cascading development in Ashley and its immediate surroundings. There is no way of knowing for certain what the post-HS2 outcomes for the landscape will be, and there will also be no way of identifying with any certainty what will have triggered any phase transition that does occur. The ongoing economic growth of Greater Manchester and the airport, for example, could trigger a phase transition in adjacent landscapes, but it would probably not be possible to separate the effects of this growth from the effects of the commencement of operation of HS2 services, or

from the construction of the line itself. This is an imagined future which indicates one possibility over a thirty year period from 2018, and is not a forecast. It is reasonable, however, to propose that a scenario like this is possible for many rural places along the length of the HS2 line.

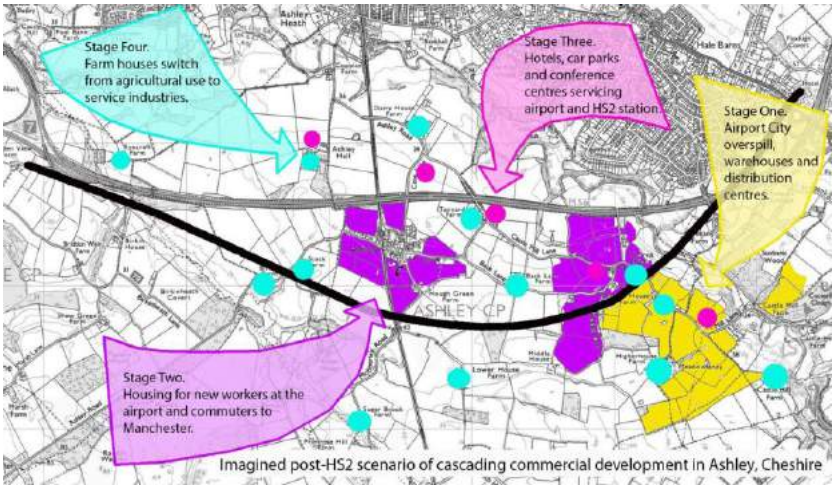

Figure 2. Author's own image, base map as figure 1.

Error! Reference source not found. shows the growth of Manchester airport and airport city such that, when the HS2 station opens at the airport, this tips the balance and causes Ashley to be removed from the green belt. A phase transition to exponential economic growth occurs, and Ashley becomes a hotspot for science parks, distribution centres and service industries such as hotels, conference centres and car parking, which service the demands of this growth. London is now only a one-hour train journey away, and Birmingham can be reached in just over 30 minutes, so commuting long distances is less of a barrier to growth. New housing is required locally to accommodate new workers. Planning permission for this will be easier to get as the rural character is lost to light-industrial development. The local landowner is keen to develop and so the village, bounded now on all sides by motorway and railway, quickly trebles in size. Farm land severed by HS2 and land contaminated by use over four years as a construction compound becomes available for development. Eventually, the island of farm land now trapped between Ashley village and Greater Manchester, succumbs to continued demand for new homes and opportunities for huge profits for developers. Existing domestic and farm buildings in Ashley become divorced from the agricultural functions of the land as farm land is developed and remaining land is drawn back under the control of the landowner and farmed by contractors rather than tenant farmers.

This scenario may sound extreme, but illustrates exactly the kind of growth desired by the UK government when they published 'Rebalancing Britain, from HS2 Towards a National Transport Strategy' (Department for Transport, 2014). This document suggests that the very first priority for the government is to reduce the pressure on Londoners of the capital city's high house prices, a congested public transport system and high costs of office space (£110 per square foot), by developing land in the North and Midlands.

By contrast, it points out that "commercial property prices in the North are nearer £28 per square foot. And yet businesses are more reluctant to move there" (Department for Transport, 2014: 12). HS2's promised short journey times, then, are presented as an opportunity to shift the pressure for development elsewhere:

> *"In London it will ease the pressure on commuters by adding 18 new train paths per hour into the capital. In the Midlands and the North it will make cities more competitive by connecting them better to the global market ...Put simply, cutting the journey time ... makes it more likely that more businesses will base themselves in the North and that existing firms will prosper...The effect should be transformational." (Department for Transport, 2014: 13)*

It seems reasonable to conclude, therefore, that phase transitions to cascading development of housing and business premises in the North and Midlands, far from being the unintended consequences of HS2, represent the aspirations which have driven the project from its early stages. Furthermore, rural locations

such as Ashley, with existing transport infrastructure and in close proximity to both a growing city and a high speed station, will be the landscapes most likely to experience such transitions.

Complexity theory, then, can help landscape professionals and researchers to understand what may happen to a landscape, and why it could occur. This paper proposes that the most important issue arising from this understanding is the likelihood that the future of such places will probably be determined by the commercial interests of big business, in particular property developers such as the major house building companies. As pockets of land severed by the new railway become available, it is therefore timely to ask what will stand between local rural landscapes, each with their own distinctive identity and history, and exponential profit-making land development? And in studying the implications of complexity theory for public engagement with a transport megaproject, what glimpses might there be of simple solutions?

3 UNDERSTANDING SOME ANSWERS

Complexity theory leads us to begin to understand landscape at every scale as a continuously evolving whole, greater than the sum of its parts and comprised of a limitless number of interacting open systems. Compare the fluidity of this landscape condition with the operation of most public consultation exercises, which attempt to operate within a complex emergent field and yet themselves are inflexible, top-down 'snapshots' of public opinion. Such processes tend to start too late, finish too early and be determined by adherence to statutory requirements rather than motivated by a true desire to access the expertise held by citizens about their local landscapes.

3.1 WHY STATUTORY ENGAGEMENT PROCESSES ARE NOT THE ANSWER

Since the announcement in January 2012 of the Government's decision to go ahead with phase 1 of High Speed 2, an enormous amount of literature has been generated that communicates various aspects of the scheme to a number of different audiences. The document that communicates intentions to members of the public who live along the proposed route is the Environmental Statement (ES) for Phase 1. This is the main source of information through which the public are consulted about their landscapes and responses to it have supported members of parliament in considering the effects of the proposals. The complete 50,000 page ES includes written and mapped information about the impacts of the proposals on places along the route and also presents digital visualisations of changes to landscapes. It is the only collated source of accurate information regarding the future of those landscapes and indeed constitutes almost the whole of the Hybrid Bill that enshrines HS2 in law.

Individuals and groups had 23 days to respond to the contents of the ES by submitting a petition to parliament. If the petition was judged valid then petitioners presented their evidence in person, in parliament, to the Commons select committee. 1,925 petitions were received. A similar petitioning process occurred in the House of Lords in April 2016, during the second Lords reading of the Bill, when 820 petitions were accepted. None of these petitions to the Commons or the Lords had the potential to stop HS2 entirely or to substantially affect the route or stations, as this is beyond the power of the select committees.

The petitioning system is an adversarial one. When you speak in front of the select committee; "The Promoters [Department of Transport] have a similar opportunity to present counter arguments against your case." (House of Lords, 2016: 2).This means that some of the most senior barristers in the country, representing the power and weight of Parliament, are set against the petitioner, who presents to several officials, including the Chair, members of the House of Lords or Commons, at least one Queen's Counsel (an eminent lawyer) for the Department of Transport and various other HS2 officials. The Lords' own final report on the process stated that "Time and again during our proceedings, we encountered difficulties with the current procedure. It became abundantly clear to us that petitioners found it cryptic and complex to understand, and labyrinthine to navigate." (House of Lords Select Committee on the High Speed Rail (London - West Midlands) Bill, Special Report of Session 2016–17: 8). There have been detailed criticisms of this combative and inflexible top-down consultation system, dependent as it is on a document of vast scope and impenetrable structure (Bynoe, 2016, Phillips, 2017). It is also based on a model which attempts to meet statutory requirements for consultation by disseminating information to inhabitants in such a way as to create the least possible public resistance to proposals.

Much has been learnt about such consultation in the field of innovative technologies. Initiatives towards engaging the public 'upstream' of developments in science and technology, rather than later on in the process, can be understood as a reaction to the 'Public Understanding of Science' (PUS) model, launched by the British Royal Society in 1985 (Bauer, 2009, Joly and Kaufman, 2008, Demos, 2004). This model has been widely criticised for addressing an "undifferentiated entity called 'the public', which was to be educated and informed in order to secure support for innovation and reduce social resistance to technology." (Joly and Kaufman, 2008: 2). The assumption that the public are a single unit of people with a coherent experience, and furthermore that they can be designated as 'uneducated' for the purposes of the consultation clearly does not stand up to scrutiny, and neither does the assumption that increased education on a particular topic will in fact lead to greater support for that issue. The PUS model "assumed that if people had all the information, and were able to understand probabilities, they would be more supportive of science" (Bauer, 2009: 4). Bauer, of the London School of Economics, finds that, on the contrary "on controversial issues there is no correlation at all" (Bauer, 2009: 4) between degree of knowledge about a scientific topic and inclination to support that technology.

This model, "in which lay people are conceived as passive and empty recipients of information" (Joly and Kaufman, 2008:2) still has powerful influence over the thinking and policy of all kinds of organisations, public and private. In the case of high speed rail, any public engagement based on such a deficit model would be highly unlikely to increase popular support for infrastructure proposals. On the contrary, it is possible that the more people learn about the probability of cascading development proposals in the wake of core infrastructure development, the greater the likelihood of objections being raised.

In these circumstances, to deliberately draw the attention of citizens to likely future developments would not be in the commercial and/or political interests of powerful stakeholders. An example of this might be the construction of a high speed station at Manchester Airport, adjacent to Ashley. HS2 Ltd confirmed that this is their intention on the 15th of November 2016 (HS2 Phase 2b Command Paper: 39). Land development pressure and increase in values as a consequence of this decision will be significant: such stations require public transport links, car parking, increased road traffic capacity and hotel accommodation for example. These will be built largely on green field sites within Greater Manchester; immediately to the east of Ashley's parish boundary. None of these developments will gain popular support from residents in Ashley, many of whom are tenants and not property owners, so have nothing to gain from knock-on effects on land values, and a great deal to lose in terms of agricultural livelihoods, landscape character and tranquillity. The temptation for a government department to minimise 'education' about such likely developments must be significant. Sherry Arnstein's influential Ladder of Participation (Arnstein, 1969) places 'manipulation' on the lowest and least desirable rung of the ladder, with 'therapy' just above it. The function of both is to educate people in to a view that the proposed plan is best. Arnstein's ladder does not extend below ground in to the cellars of public consultation, where it is possible to imagine that an additional rung, perhaps called 'obfuscation', would denote a desire to avoid educating a public about matters that will affect them. Efforts towards genuine public engagement may also be hampered by "the pro-technology belief system, the inertia of administrative power, the intense industry lobbying" (Wang, 2016: 16). In such circumstances, it seems reasonable to assume that the Department for Transport's own engagement strategy will not be sufficient to secure a meaningful voice for inhabitants in the futures of their own, emergent, landscapes.

3.2 INTERIM CONCLUSIONS: CASCADING ENGAGEMENT WITH LANDSCAPE

If the public engagement strategy of a central government department is, in its present form, too top-down, unwieldy and unresponsive, then perhaps local planning procedures might offer a framework for engagement with landscapes on the massive scale required by such revolutionary changes. The possibilities offered at the Parish level by Neighbourhood Planning legislation in the UK form an ongoing element of this research in Ashley. Initial findings, however, indicate that there is a likelihood that land ownership patterns and the business interests of developers will have very significant influence over this outwardly democratic exercise (Phillips, forthcoming).

In contexts such as those described here, it can be difficult to imagine a strategy for public engagement that could possibly hope to respond to complex challenges with any hope of having positive outcomes for the landscape. It could seem that the scale of resources and advance preparation needed to answer these problems render the goal of citizen-led participation in a transport megaproject entirely unrealistic.

However, just as the landscape emerges from very simple low-level interactions between systems, it might be possible for effective public engagement to do the same. As this PhD research develops it will investigate how public engagement with landscape could be encouraged to cascade just as development does. This idea seems to offer the possibility of a fluidity of response that could have a power commensurate with that of the challenges in prospect. It also raises a number of questions that I would be very happy to discuss with conference delegates. An important consideration, for example, is whether a landscape phase transition could, theoretically, be 'steered' in any way. I am also interested in whether citizens could/should routinely initiate their own landscape proposals. I will consider what the role of the landscape professions should be, and what might constitute the rules of engagement for professionals, inhabitants and government. I want to know how citizens could participate in a process that begins with simple interactions but embraces evolving complexity, setting the agenda from the beginning and iteratively rewriting that agenda to respond to emerging circumstances. Work in Ashley suggests that prioritising an embodied experience of the landscape is crucial as a means of understanding the requirements of that landscape, so how should this finding be applied? In all of this the aim will be to achieve fuller understanding of complexity, and a 'reflective capacity' rather than simplistic consensus about the long-term future of local landscapes.

BIBLIOGRAPHIC REFERENCES

Arnstein, Sherry R. (July 1969). A Ladder of Citizen Participation, Journal of the American Planning Association, Vol. 35 (4), 216-224

Bak, Per. (1997). How nature works, the science of self-organized criticality, Oxford, England: Oxford University Press

Barnett, Rod. (2013). .Emergence in landscape architecture. London, England: Routledge

Bauer, Martin W. (2009). The evolution of public understanding of science - discourse and comparative evidence. Science, technology and society, 14 (2), 221-240

Bell, Simon. (1999). Landscape, pattern, perception and process, 1st Edition. London, England: E and FN Spon

Bynoe, Ian. (April 2016). Review following PHSO report on an investigation into complaints about High Speed Two (HS2) Limited, report to Simon Kirby, chief executive of HS2. London, England: House of Commons

Swaffield, Simon and Deming, M. Elen (2011) Research strategies in landscape architecture: mapping the terrain, Journal of Landscape Architecture, 6:1, 34-45, DOI:10.1080/18626033.2011.9723445

Wilsdon, James, and Willis, Rebecca. (2004). See-through science why public engagement needs to move upstream, Demos, DOI: 10.13140/RG.2.1.3844.3681

Goldstein, Jeffrey. (1999). Emergence as a construct, history and issues. Emergence vol. 1 , Iss. 1, 1999, 49-72

HS2 Ltd. (2014). Rebalancing Britain From HS2 Towards a National Transport Strategy. London, England: Department for Transport, UK Parliament

Joly, Pierre-Benoit and Kaufmann, Alain. (2008). Lost in translation? The need for 'upstream engagement' with nanotechnology on trial. Science as Culture Vol. 17, No. 3, 1–23

Lewes, G. H. (1875). Problems of Life and Mind, vol. 2. London, England: Kegan Paul, Trench, Turbner, and Co.

Lewin, Roger. (1993). Complexity, Life at the Edge of Chaos. London, England: JM Dent

Nairn, Ian. (1955). Outrage, London: England: Architectural Review

Drury, William H. (1998). Chance and Change. Berkeley, USA: University of California Press

House of Lords (2016). High Speed Rail Bill Petitioning Kit Guide. House of Lords, London, England: UK Parliament

House of Lords Select Committee on the High Speed Rail (London - West Midlands) Bill. (2016–17). Special Report of Session 2016-17, London, England: UK Parliament

HS2 Independent Assessor (Golder Associates (UK) Ltd. (7 April 2014). Summary Of Issues Raised By Comments On The Environmental Statement. London, England: House of Commons

HS2 Ltd. (2015). Corporate Plan 2015 to 2018. London, England: HS2 Ltd

HS2 Ltd. (2016). Phase 2b Command Paper.London, England: UK Parliament

Johnson, Steve. (2001). Emergence, London, England: Penguin

Phillips, Jo. (2017). The “whys and wherefores” of citizen participation in the landscapes of HS2 . Planning Theory & Practice Vol. 18 , Iss. 2, 328-333: DOI 10.1080/14649357.2017.1307538

Steiner, Frederick R. (2008). The Living Landscape, Washington, USA: Island Press

Wang, Xi. (April 2016). Revisiting ‘upstream public engagement’ from a Habermasian perspective. Nanoethics, Volume 10, Issue 1, 63–74, Springer Netherlands

ID 1424 | HOW TO APPROACH URBAN COMPLEXITY, DIVERSITY AND UNCERTAINTY WHEN INVOLVING STAKEHOLDERS INTO THE PLANNING PROCESS

Jossé-Miguel Fernández-Güell[1]
[1]Universidad Politécnica de Madrid (UPM)
josemiguel.fernandez@upm.es

1 CHARACTERISTICS OF CONTEMPORARY CITIES

Complexity, diversity and uncertainty are three key attributes of contemporary cities which mark their recent evolution and strongly condition the task of urban planners and public officials (Fernández Güell et al., 2016; Fernández Güell, 2006; Camagni, 2003).

The first common feature of all large and medium-sized cities is the high level of complexity of the operational processes that take place within the city and in its hinterland. Complex systems such as the climate and the economy are characterized by being spontaneously self-organizing and adaptive to changes that happen in their context (Holland, 1995; Stacey, 1995). Just as well, it is widely accepted that cities are one of the best examples of complex systems (Portugali et al., 2012; Allen, 1997). As a rule, complex cities experience unpredictable non-linear dynamics and they are capable of self-transformation in order to adapt to changing contexts. Therefore, urban problems are multidimensional and complex since they emerge in an intricate dynamic network of relationships from societal, economic, environmental and political issues.

The operational complexity of cities has been a recurrent handicap for urban planners because it complicates urban analysis and policy making. In the past, planners have tried to deal with complexity with either sophisticated mathematical models or just plain narratives, in both cases without much success. Despite its challenges to analysts, the phenomenon of urban complexity should not be obviated or simplified in excess; on the contrary, it should be conceptually understood as much as possible. The understanding of complexity can facilitate a more informed and evolutionary vision of cities than the standard reductionist and static approaches of many planning processes.

The second feature inherent to any big and medium-sized city is social diversity. This important, but elusive feature has been analyzed by well-known authors from different perspectives such as architectural design (Alexander, 1965), neighbourhood fabric (Jacobs, 1961) or participatory process (Innes and Booher, 1999). As a matter of fact, diversity is not just about ethnic or geographic origin. It is also about social diversity, different cultural expressions and multiple economic interests. Basically, urban diversity is generated by the disparity and heterogeneity of local and supra local agents who intervene in the socioeconomic activities of a city. In addition, cities are diverse because they are inhabited by a wide spectrum of citizens who are not as well organized as large stakeholders, but who have the right to be involved in city affairs.

Diversity and governance are intrinsically linked. In a democratic urban community, political decisions are the outcome of diverse interest groups with different levels of power, with the elected politician as the