

Bottom up or top down? Subjective or objective? Localism or datascaping? What is the future of our (strategic) landscapes?

Could datascaping be a viable or more intelligent approach to strategic planning as opposed to proposals indicated in the Localism Bill 2010?



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Introduction

My personal practice has seen an adapted application of MVRDV's datascaping method to strategic landscape practice as seen in the video installation and book *Metacity: Datatown* (1999). As the approach uses solely data to drive the design, I was intrigued to explore the potential impact and implications this objective design method might have on the inhabitants of a *place*.

It is of contemporary relevance to discuss why the decision making structure in England has been transformed to a subjective, bottom up approach when an objective, top down approach emerges from landscape architectural research in the Netherlands. With the adoption of the Localism Bill in England in December 2010, there has been a significant shift in power in the way our landscapes are shaped. As part of David Cameron's 'Big Society', communities now have the power to decide the fate of their own local community. The previous top-down decision making has been shifted to bottom-up in a decentralisation of central government to local government and communities. The community's subjective aspirations for the place that they inhabit is a stronger force than ever. Proposals that are agreed by a public majority are automatically granted planning permission and local referendums on any local issue must be considered in an attempt to genuinely empower the community.

Datascaping is a top-down decision maker that aims to remove the subjective from its process ensuring that measures we impose on the landscape are truly necessary and truly fitting to the needs of humans and thus ensuring our survival. The rationalist method responds to the extreme pressures of globalisation, urbanisation and climate change aiming to simplify these complex relationships we face in the landscape through the extrapolation of data. The removal of ideology and representation from the design process pushes the design to its limits, exposing possibilities that may otherwise have been hidden.

But this shift in power in England is significant. The government has recognised that communities do have a part to play in the shaping of our landscapes and give value, or not, to the landscape in which they live. Place to them is not just the abstract space that exists in datascapes, it holds emotions and meaning, contributes to identity and according to Thwaites and Simkins (2007), *place* is fundamental human experience. However, *place* is intrinsically subjective and problems arise when these views conflict.

This thesis aims to discuss objective and subjective approaches and poses the main question: Could datascaping be a viable or more intelligent approach to strategic planning as opposed to proposals indicated in the Localism Bill? Based upon the Coalition Governments drive for a greater transparency and the importance of community participation in the decision making process, I propose that a method should be developed to test public attitudes on the adoption of datascaping. A recommendation of hypotheses will be derived through the thesis which, in the future, could form the basis of such a questionnaire.

1.0 Datascaping

Datascaping is a contemporary method that has emerged from Dutch architectural research as an approach to land use planning and landscape design. Conceived in 1997 by Winy Maas of Dutch firm MVRDV, datascaping is a numerical design process, that is framed in the context of sustaining an ever increasing urban population. By abandoning topography, ideology, representation and context, MVRDV use only pure data in an attempt to find a new understanding of the contemporary urban landscape when globalisation has exploded to the extremes, beyond our control. It follows the assumption that complex processes in our environment, economy, politics, culture and society require statistical techniques in order to understand them, for it is only when we understand a problem, that we can suggest an appropriate solution.

1.1 An Alternative Approach

“The landscape architect is seen as the personification of the pastoral, the harmonious, the environmentally friendly: truly ‘good’ and noble aims.” (Maas, 1995: 97)

This ‘moral’ position of a landscape architect that Maas (1995) refers to is often misused for political objectives. Maas proposes this: “Instead of a mere argument for goodness, this domain has the capacity of putting into perspective.” A landscape architect has the ability to provide an overview, both good and bad, instead of being swallowed by the paradigms of ‘purity’, ‘harmony’ and ‘nobility’ that have historically characterised the profession. Amongst the contemporary theories of chaos in architectural research at that time, Maas questions how to deal with the moral and asks “should architecture still aspire to expressing ‘chaos’ even when it is already surrounded by it?” The chaos Maas refers to is the rise of urbanism describing it as the “realms of quantities and infrastructure, time and relativism” (Maas, 1996: 100)

Maas conceives an alternative approach to the architectural research that had gone before, providing a basis for datascaping as understanding the behaviour of massiveness by pushing it to the limits and extremising the scenario. “Under maximized circumstances, every demand, rule or logic is manifested in pure and unexpected forms that go beyond artistic intuition or known geometry and replace it with ‘research’” (Maas, 1996:103). The ‘known geometry’ that Maas refers to are the accepted forms, recognised dimensions and preconceived ideas of what something should be like. This research observes, analyses and criticizes our behaviour, giving us a ‘truthful’ representation of the future scenarios our landscapes face.

Manifestations of such data exist and have existed; they can be seen as ‘scapes’ of the data behind them. Described by Lootsma as the “visual representation of all the measurable forces that may influence the work of the architect or even steer or regulate it.” (Lootsma 1999: 273) Examples of such manifestations could be La Defense, Paris where high rise rules were avoided with 18m high ‘steps’ so that offices can be entered by the

maximum length of fire ladders and more contemporary manifestations include lighting regulations, acoustic treatments and psychological issues.

Landscape is complex, aside from the visual appearance, many invisible forces act upon its processes giving it shape. Measurable forces may be planning and building regulations, technical, economical constraints, natural conditions such as sun paths, wind speeds, and legislative measures. Some of the most important aspects of the process are things often perceived as uninteresting by designers who put their own creativity first, such as traffic law. By accepting these rules, the designer commits a genuinely public act. (abid.) Datascaping can “make visible aspects and opportunities of the regulatory matrix that were never intended. They merge out of an apparently arbitrary extension of logic, point to the arbitrages of the rules themselves and, at the same time produce something unexpected.” (Maas et al. 2003: 5)

1.2 Design method

Since 1997, Winy Maas of MVRDV has been conducting research at the Berlage Institute in Rotterdam, an independent postgraduate school for architecture, urbanism and landscape architecture. The research began with the concept of ‘datascares’ as design process where “everything - or almost everything – was submitted to the iron logic of data” (Maas et al. 2003: 5). Following in 1998, Metacity/Datatown was created by Winy Maas and MVRDV. Originally a video installation of the same title produced by MVRDV for the Stroom Center for Visual Arts, The Hague, Metacity/Datatown is presented in book form. (see figure 1.1)

Studying a situation to its maximum implies rules. Datatown is presented as a sequence of hypotheses and scenarios that use Dutch population statistics as its database. It has a defined boundary dictated by the speed of a bullet train, a population 4 times denser than the Netherlands with 241 inhabitants and is autarkic, meaning it has to be self supporting and solve all of its problems within its boundaries. Data has been sorted into sectors relative to existing land-use in the Netherlands, for example, the Living Zone where all the population resides, the Transport Zone, Dry Nature Zone. The spatial area consumed by each sector is abstracted into a barcode diagram where the total area is represented in Mondrian like fields (figure 1.2).

The start of the design process is an extensive mapping of all the internal and external forces that may influence a project in a statistical format. Only a couple of influences at a time are in their extremity. Studying statistics under extreme scenarios creates frontiers and edges that subsequently lead to inventions. Data is selected and connected according to hypothetical prescriptions, and subsequently numbers are transformed into diagrams. The diagrams are “emblems for operations, agendas, tasks”. The reduction in space that occurs in the process of abstraction leads to ‘what ifs’, which result in a visualisation of what would happen at that given location. Datascares present and represent a contemporary reality which becomes a source of inspiration of that reality. (Maas et al. 2003: 5)

For example: “In one year, Datatown produces 1,137,711,000 tons of waste, or a hill of 549,326,184 m³. If one selects and sorts the waste, subdividing it into different piles, a mining landscape of hills emerges...after 150 years it will become a dolomitic landscape.” See figure 1.3. (MVRDV, Maas, W., Stroom. 1999)

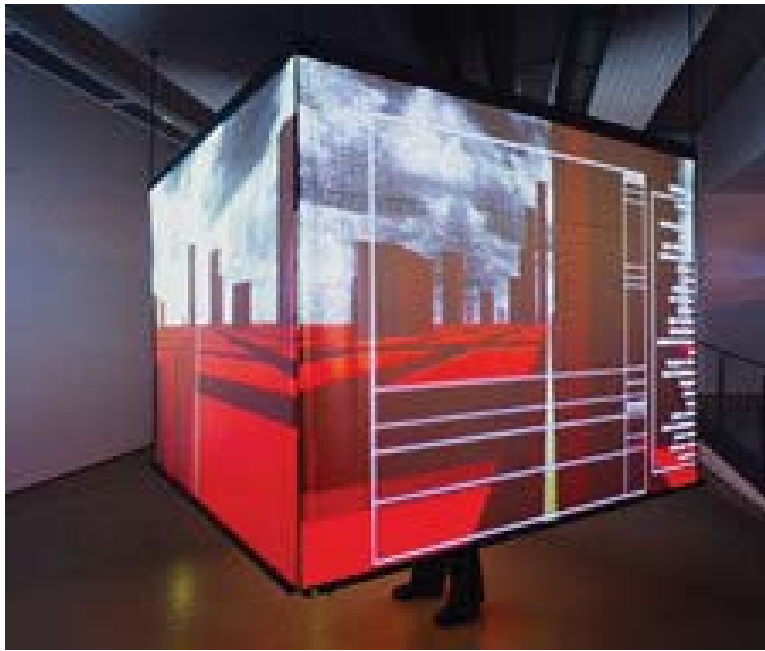


Figure 1.1

Video installation of Metacity/Datatown (MVRDV, Maas, W., Stroom. 1998)

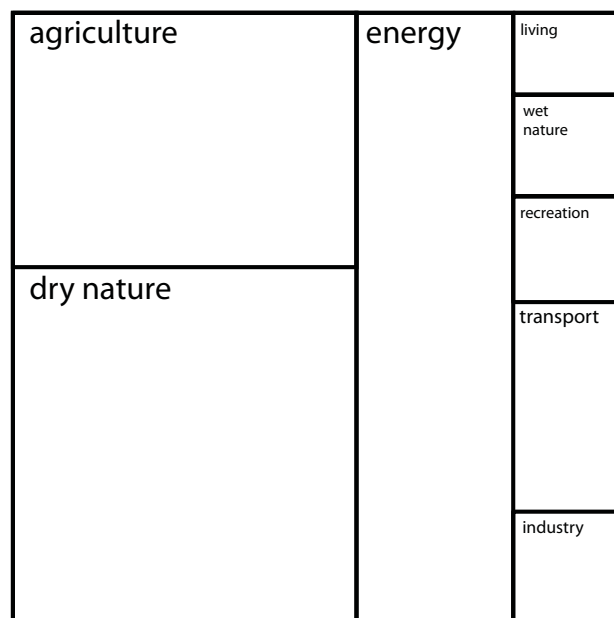


Figure 1.2

Barcode diagram from a personal design experiment in Cumbria, representative of those used in Metacity/Datatown (1999) to describe land use in abstract space.

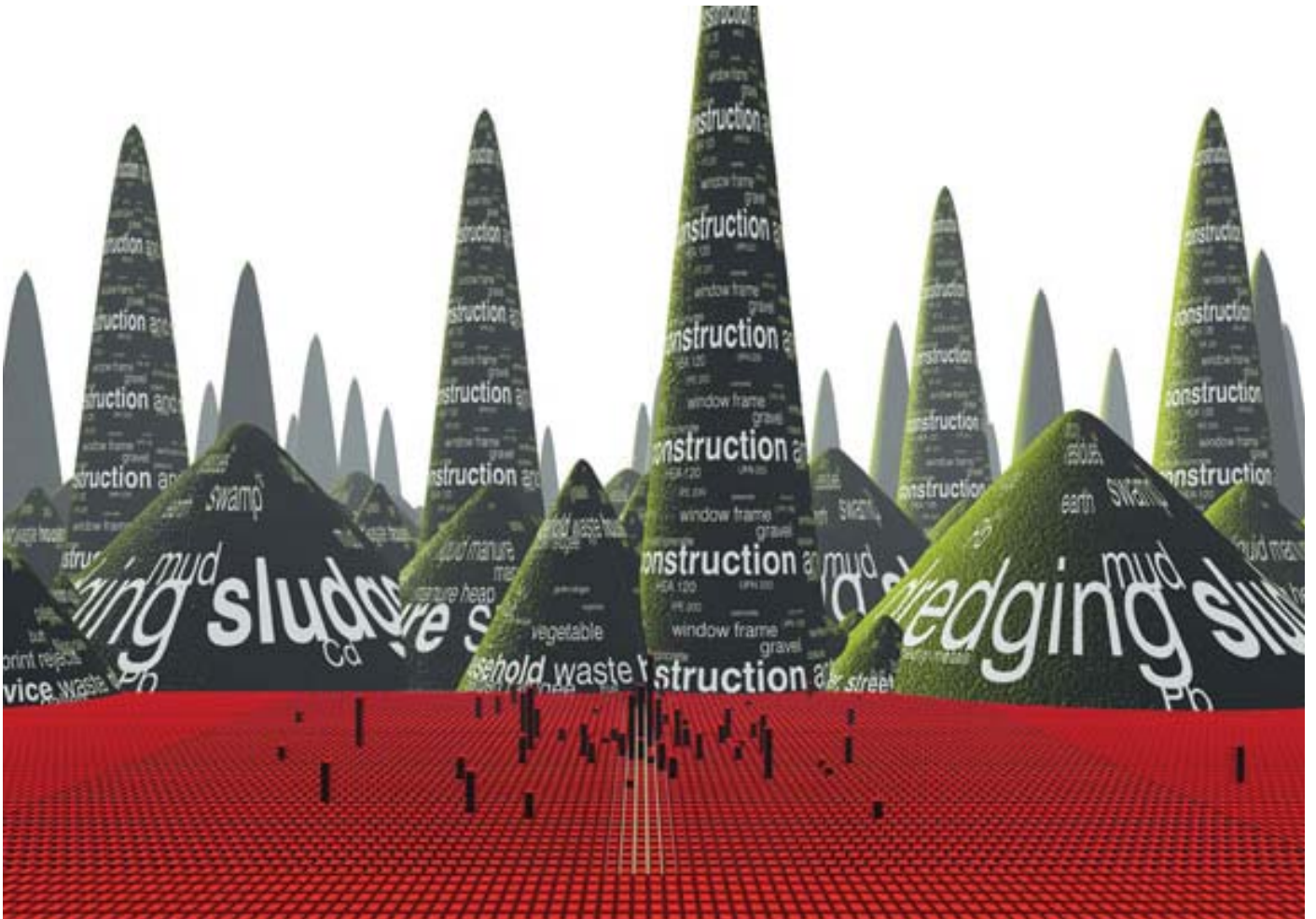


Figure 1.3

Waste Zone extract. (MVRDV, Maas, W., Stroom. 1999)

“In one year, Datatown produces 1,137,711,000 tons of waste, or a hill of 549,326,184 m³. If one selects and sorts the waste, subdividing it into different piles, a mining landscape of hills emerges...after 150 years it will become a dolomitic landscape.”

1.3 The Case for Datascaping

Cities and societies “need to develop an ability to deal with increasing complexities, the multitude of data available and the present incompatibility and inconsistency of many of the forms of knowledge and values” (Wall 2002: 29). Even instinctive or emotional arguments can nearly always be quantified, by a poll or vote for example. If we understand what is happening, and if we can conceive and explore alternative futures, we can find opportunities to intervene, sometimes to resist, to organize, to legislate, to plan, and to design. (Mitchell 1999)

Infinite knowledge can be absorbed by the datascaping system, meaning the datascape is always in progress. The system is dynamic and can therefore cope with the accelerating speed of spatial, economical and political developments and processes whilst addressing environmental and social problems. MVRDV have produced several publications since *Metacity/Datatown*, capitalising on the force and efficacy of the abstraction to guide new development in response to contemporary issues. For example, *KM3* (2006) was a response to scale enlargement due to the effects of globalisation, shifting the emphasis from the cubic metre to the cubic kilometer or km³. *CLIMAX* (2003) shows the possible consequences of political decisions with regards to climate change. Two extreme scenarios are created, reduction of CO² output, or doing nothing. *Five Minute City* (2003) explores what a city might be like that has a maximum travel distance of 5 minutes, whether that be by car, cycle or foot, data is extrapolated to generate possible scenarios.

The scope of this method is wide in that it can not only generate the extreme reality of the future, allowing us to predict, and giving us the opportunity to intervene, it also has the ability to combine knowledge from different professions at any given location or scale. Although Maas accepts that datascaping cannot solve every problem and that the method should be seen as “a structure that can position and integrate current knowledge” (Maas, Wall 2002: 131), the assumed expertise and objective methodology certainly gives us a convincing representation of a reality we may face. The voids can also point the direction of future research in the field.

2.0 The Rise of Objectivity

There is evidence of a dominant influence of the principles of Positivism and its Enlightenment origins in the datascaping approach. These eras are thought to have fuelled a fixation with methods which aspire to the analytical solidity of science, a bias towards quantitative considerations, the consequence being a subjugation of experiential and emotional dimensions of place experience. This has formed a reductionist undercurrent in landscape architecture, although rarely explicit, the mindset often adopted by landscape architects seems to reinforce a prevailing view that complex problems can be reduced to its perceived component parts to make it easier to understand and resolve. (Thwaites, Simkins, 2007)

2.1 Scientific Revolution 1500-1700

Before the scientific revolution in 1500, nature was experienced in terms of organic relationships with an interdependence of spiritual and material phenomena. It was about understanding the meaning of things rather than prediction and control. This theory was undermined by Copernicus in 1543 with the hypothesis that the earth did not occupy a privileged position in the centre of the universe and was given additional support by Kepler who aimed to show that “the celestial machine is to be likened not to a divine organism but rather to a clockwork.” (Thwaites, Simkins, 2007: 3) It wasn't until 1632 that this became established as a valid scientific theory in Galileo's work. Galileo was the first to combine scientific experimentation with mathematical language to formulate and communicate his findings. This mathematical approach was developed and advocated by Francis Bacon in England, and scientific theory today still remains upon these foundations. The empirical approach and mathematical description of nature began to raise the significance of measurable and quantifiable properties such as movement and shape. This in turn diminished subjective properties such as colour, taste and smell. The belief that the only reliable truth came from scientific inquiry, gave Bacon's work influence in the early development of objective reasoning.

2.2 Age of Enlightenment

Descartes developed a new method of reasoning based on mathematical language which would provide the key to a complete understanding of natural phenomena. Descartes viewed nature as a complex machine that was governed by mathematical laws, expressed in the theory ‘The universe consists of matter in motion’. His method of reasoning remained dominant in Western society for three centuries and its success can be seen in the technological advances in the industrial revolution and the mathematical approach has been valuable to solving complex problems we face today. However the prime influence on western scientific thinking came from Isaac Newton. Newton was able to confirm the conceptual framework of Descartes by providing a consistent theory for objects in motion evidently linking nature to a mechanical system. Newton's mechanistic theory of the universe and belief in the rational approach would underpin the Age of Enlightenment. Intellectual

achievements in the scientific revolution cast a shadow on the medieval notions of the organic world, of myth and spirit. The Age of Enlightenment can be summarised by the belief that natural phenomena are absolute and complete and can ultimately be determined as such by the application of rational procedures. (Lincoln and Guba, 1985)

One of the features of the new found method of scientific reasoning was the primacy of analytical procedures raising quantitative criteria above qualitative criteria as the measure of truths and reality. To demonstrate the idea of scientific data as truth and how we trust it Ian Thompson (2009) uses this example: the isle of Lindisfarne on the north east coast of England is linked to the mainland by a causeway which is submerged at high tide. Visitors don't just use their intuition, ask someone who appears local or even consult their horoscopes to enable them to make a safe crossing. They consult a tide timetable which has been devised through careful empirical observation. The data in the timetables really does represent observed regularities in nature.

2.3 Positivism

The Post Enlightenment concept of theory as a set of operational rules brought about a positivistic problem solving attitude in landscape architecture, resulting in a separation of human experience. The effects of Positivism on the theory of landscape architecture, according to Corner, by mid 19th century, it was reduced to a form of technical knowledge (Corner, 1990). Positivist principles underpin current design methodology in contemporary landscape architecture where objective knowledge must be obtained before any action is taken, as well as explaining design processes. For example in the Survey-Analysis-Design (SAD) method, a semi-scientific survey is carried out followed by a subsequent analysis of the results before the designer made a creative leap to reach a design. The method was considered unsuccessful as more often than not, the design had little relationship to the scientific study (GardenVisit, 2008). Datascaping demonstrates these positivist principles strengthening the belief that humans can explain, control and manipulate their surroundings and justifying its outputs by the rational procedure involved. Positivism as described by Thwaites and Simpkins "involves explicit description and explanation of factual phenomena. It requires assertions about reality to be capable of test by scientific method and to withstand detailed and objective scrutiny." (2007: 5). Lincoln and Guba (1985) also state the assumption of value freedom, that is, the methodology guarantees that the results of an inquiry are essentially free from the influence of any bias. Both viewpoints support the theory that objectively gathered data represents the truth and reality.

However, landscapes that result from Positivist attitudes in Corner considers to be "deserts of quantitative reasoning" and "mathematically efficient and economically profitable while the poetics of place have been blindly erased" (Corner 1991: 118). This view is also supported by Koh (1982) describing positivistic landscapes as "professionally excellent but socially irrelevant" (77). Both views suggest a lack of consideration for human experience. One reason why this may be the case is due to the top-down approach where the data collector and decision maker is remote from the human *inside* the landscape. Lincoln and Guba (1985) highlighted that positivism rests on this assumption of the possible separation of the observer from the observed and the knower from the known. This is also supported by Cosgrove (1984) was one who reacted against the

dominant scientific world view saying it lacked account of subjectivity. He thought that subjecting the landscape to rigorous analysis denied the integrity of the insider's experience. "The claims of scientific understanding reinforce the notion that objects of the study are real and true. Thus to claim scientific treatment of landscape in geography is to extend the claim of realism for the outsiders view, to devalue that of the insider and thereby to underwrite the ideological position that landscape claims." (Cosgrove 1984: 9). However there are times when the outsider does know best, consider the role of specialist professions such as ecologists and hydrologists. There is a power in science that is rooted in detailed expert knowledge and the vast majority does not know how to contradict or evaluate it. "Science is seen as undemocratic, elitist, hierarchical, meritocratic and ruthless." (Benson, Stangnoom 2006: 12)

2.4 Modernism

The rise of rationalistic problem solving became a defining characteristic of the relatively new profession of landscape architecture. American landscape design in late 1930s rejected traditional history to adopt a forward thinking, not backward looking attitude. James Rose and Garrett Eckbo challenged the value of history as a "lexicon of styles or typologies to be unquestionably applied to contemporary problems and projects." (Trieb 1995: 90) Design in the profession had become a problem solving activity following a two stage rational model where an objectively gathered database of functional requirements preceded the development of form, or more commonly known as *form follows function*. By making decisions according to quantifiable and objective information, designers felt their creativity would assume "sought after solidity, authority and legitimacy of scientific rigour" as well as gaining interdisciplinary recognition and respect. (Thwaites, Simkins, 2007: 9) Growth in the interest in design methodology in the early 1960s reinforced these characteristics due to the relatively new and insecure interdisciplinary relationships. Christopher Alexander, mathematician, architect and town planner compares design problems with arithmetic in 'Notes on the Synthesis of Form' (1964). The logic of arithmetic would provide a validated means to allow designers to find solutions for increasingly complex problems. He was dissatisfied with limitations of traditional design methods to solve complex problems and looked to his mathematical background. A mathematical approach seems to avoid artistic individuality by making decisions accountable against a given method. There is an underlying assumption that a good method gives good output, and that the quality of the output is judged on the quality of the method rather than on external criteria e.g. user experience (Thwaites and Simkins, 2007; Alexander, 1964).

2.5 The Fall of Objectivity

Criticisms in the 1980s and 90s show a loss of confidence in the design methodology, with examples of such commentators being Cosgrove and Corner. Landscapes built from this rational approach are unsatisfying and there is a desire for a change in direction. This presents an interesting question as to why a couple of decades later, MVRDV propose a method derived from these very objective and rational roots? Thwaites and Simkins (2007) state that the general climate of modernism was characterised by a perception of increasingly complex

problems, doubts of capability of traditional design methods, fears about how design outputs can be legitimised within growing techno-scientific society and insecurities within the immature profession. Is it possible that we are facing similar problems today in the face of an urbanising population, rising sea levels and growing pressure on our future resources? Maas proposes that the only way we can attempt to understand these problems is to use a rational objective approach that simplifies these complex information systems.

However there is a tendency to become disconnected from direct interaction with the environment through personal experience because of the scale and complexity of the problems. 21st century communication and information systems are needed to grasp the issues. Hough (1990) recognises the advantages and the disadvantages. "Information technologies are essential aids to the evaluation of complex data and land use options that would otherwise be enormously time consuming. The danger lies in the potential to diminish our sense of understanding of the place, of environmental awareness and values." (Hough 1990 :76) Hough is one of many theorists who believe that objective design methods subjugate the subjective diminishing the human experience of a *place* is diminished. Thwaites and Simkins (2007) argue that an overemphasis on rationalising modes of thinking applied to manufacture and manipulation of the physical components of the environment, impedes the achievement of meaningful landscapes and human experience of them. This view that the subjectivity of the human cannot be ignored is dominant in Western society has arisen relatively recently in history. The following section will discuss the importance placed on these subjective views of the local community in the context of the Localism Bill 2010.

3.0 The Localism Bill

The Localism Bill 2010 is one part of the "Big Society" philosophy adopted by the Coalition government, which extends further than just the planning system. The "Big Society" is a broad vision that spans across a range of public services aiming to 'empower' local communities by decentralizing decision making from Whitehall and central government to local communities. Decisions that affect local communities can now be made by local people in a "shrinking of the state". Although Localism holds no firm meaning, it defines the concept of the "Big Society" in that planning decisions will now originate from a local level rather than from national policy. It marks the end of nationally set targets with the abolition of Regional Spatial Strategies, empowering local authorities and communities to set their own. A greater emphasis is now put on public participation in planning applications, and in some cases, an end to them altogether. The significance of this shift in control is the value placed in the subjective views of the public to shape our future landscapes. Cameron describes this move as "the key to economic, social and political success in the future", but does this approach really tackle the future needs of the human population and the global issues we face today? Will the public have trust in the decisions that are made subjectively? Will the public want to participate at all?

3.1 The Planning Policy in England

The Town and Country Planning Act 1947 laid the foundations for the land-use planning system in England. The Post War mood of reconstruction and improvement coupled with a modernising belief in rational planning and science meant that ambitious public projects could be contemplated to tackle issues such as agricultural intensification and town building. Planning was about improving efficiency and nobody doubted that landscapes had to be rationally planned to maximise their productivity. (Thomson 2009; Colvin 1970) Under this act, local planning authorities have to draft out a local plan and set of policies for the use of land.

County structure plans were introduced in the Town and Country Planning Act 1968 to provide guidance for the local plans. Regional Planning Guidance, which acted as a strategic framework for county structure plans followed in 1988. These plans were not statutory and it was not a requirement that the county structure plans and local plans should conform.

Greed (1996) argues that the local government system is considerably weakened in the 1990's compared to the past. During the postwar construction period, significantly during the Labour government, planning was prioritised as a means of organising the economy and built environment. The perceived inefficiencies and conflicts of a market economy would be replaced but logical, rational planning to create a more productive system. Such experiments were readily criticised because the planning policies did not always deliver the goods. However, during the enterprise culture of 1980s, Greed (1996) argues that the entrepreneurial expansion under Thatcher, planning experienced a change in direction. It was held that market forces as opposed to government intervention worked best in improving the economy alongside finding solutions for society's problems. Emphasis was put on granting planning permission rather than refusing it. The approach resulted in the weakening of the green belt policy permitting a proliferation of urban fringe residential development. The 1990s saw a return to the primacy of the development plan under Secretary of State John Gummer as an attempt to limit development.

3.2 Regional Spatial Strategies

In 2004, the Planning and Compulsory Purchase Act 2004 was introduced as a two tier statutory spatial development plan system consisting of regional spatial strategies and local development frameworks. The counties retained statutory planning powers to draft minerals and waste plans, but county structure plans were abolished. Regional Spatial Strategies outlined the key priorities for development in a particular region, targets set through a top down structure. The strategies also set out targets for achieving sustainability and environmental protection as well as addressing transport and waste infrastructure. Between 1947 and the implementation of regional strategies, local authorities voluntarily collaborated to tackle strategic issues and the guidance produced was not statutory. With the implementation of Regional Spatial Strategies, it became statutory that local development followed its guidance with a 'general conformity'.

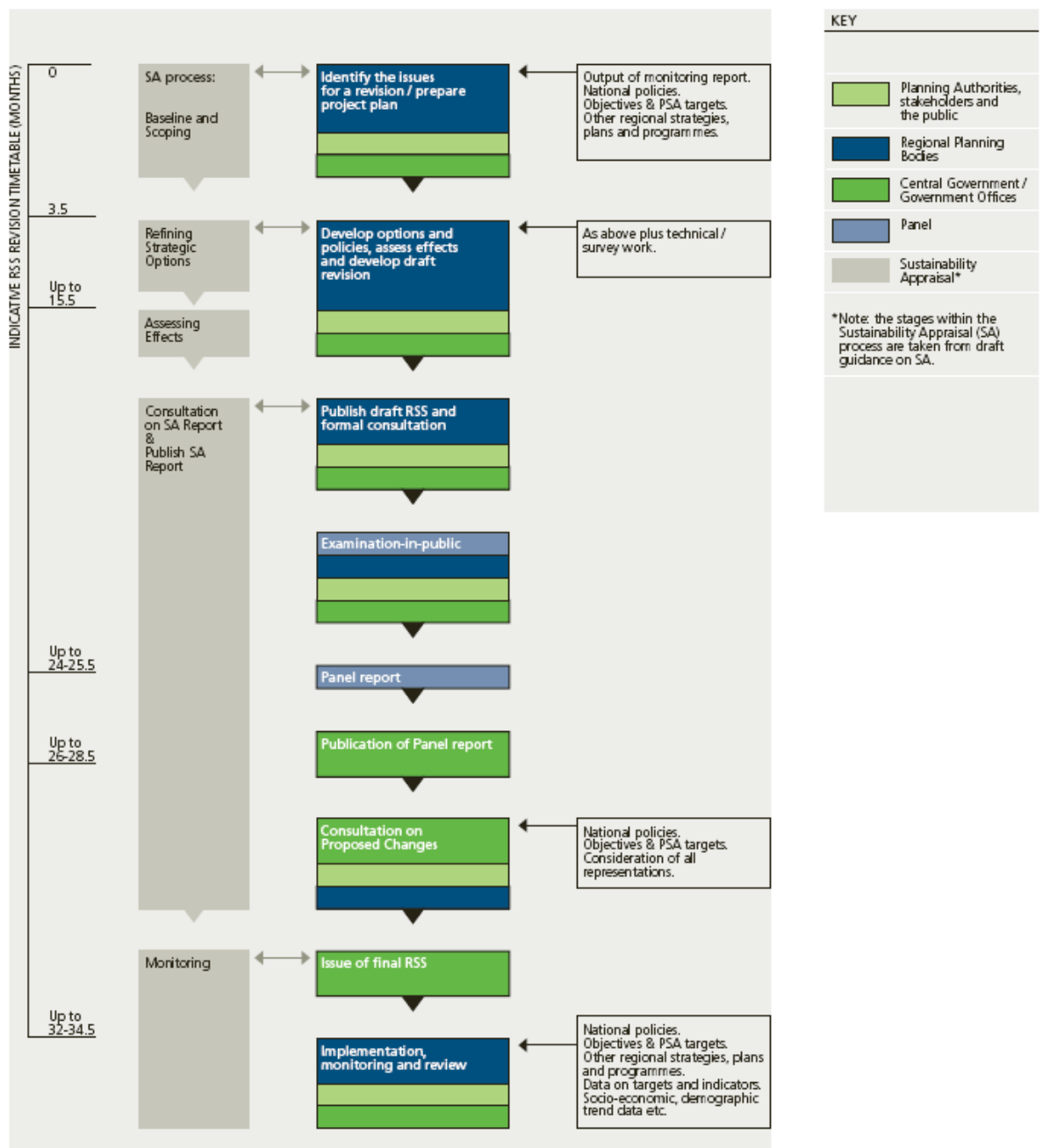


Figure 3.1

The Regional Spatial Strategy Revision Process from Planning Policy Statement 11.

However Regional Spatial Strategies created two broad issues of concern for the Coalition government. Firstly, the regional planning bodies that were creating the plans were considered not to be democratically accountable due to their isolation from the communities they served. Secondly, the national targets, particularly housing targets, resulted in the “alienating and antagonising” of local communities. Three main criticisms, as stated by the Coalition, of the regional strategy process are that it is: complex and time consuming (it took 4 to 5 years to complete a final plan, see figure 3.1); very expensive (around £16m a year to run revisions, implementation and monitoring); and that the strategies themselves attract a high level of public opposition. For example, in the East of England the Government Office received 21,500 representations and comments on the draft regional spatial strategy, of which the majority at 78% were objections (Communities and Local Government, 2011). On the 27 May 2010 the Secretary of State, Eric Pickles, wrote to all local planning authorities and the Planning Inspectorate confirming the Coalition Government’s policy position on regional strategies and on the 6 July 2010, regional strategies were revoked through a Parliamentary Statement.

3.3 Today: Local Decision Making

The Coalition Government today has a strong belief that local communities need to be re-engaged in the decision making process, and it is from this belief that more power has given to the local level. Under schedule 9 of the Localism Bill 2010, parish or town councils and local community groups have the power to apply neighbourhood development orders and neighbourhood development plans. The plans set out policies for development for a particular local area and the orders grant planning permission. To further empower communities, local communities can now propose developments which, if it meets certain safeguards and receives 50% of support in a local referendum, it is granted automatic planning permission. Residents can bring forward referendums on particular topics or issues relating to “economic, social or environmental well-being of the area” if only 5% of the local population have signed it in the last 6 months. The results of the referendums are not binding, but they have to be considered by the local authority, thus helping views known. The proposals set out in the Localism Bill with regards to planning are aimed at tackling the lack of development in rural areas where planning authorities have previously restricted it, although the Government fails to provide evidence of this. However if only 5% of the local population were in objection to the development, it could result in the opposite ‘not-in-my-backyard’ response and reduce the rate of development or in the extreme scenario, it may come to a complete halt. This could have many impacts such as not providing sufficient resources and disregard to the disadvantaged and future generations who may not be fully represented. On the other hand, development could become out of control with no concern for the wider needs of the region, country and world. The implications of a method based on subjective views will be discussed further in the chapter. Firstly, I would like to discuss reasons why an approach based upon community empowerment might have been adopted by the Coalition.

3.4 Why a Bottom up approach?

The changes in the recent political and economic scene have weakened the local government structure financially and administratively, significantly reducing available funding. One reason why a power shift may have occurred is to reduce the financial burden of resource provision from the public sector to the community. Community participation is “seen as central to cost-effective strategies for regeneration in urban, industrialized contexts.” (Craig, Mayo, 1993: 2) Costs are shifted from the public sector budgets by persuading communities to make increased contribution through their voluntary effort. Participation of the public in decision making in this context is part of a wider strategy to promote savings.

The Localism Bill 2010 represents a radical reform at the local government level aiming to genuinely empower the community. Members of the community who were previously powerless could now achieve power alongside those who have already achieved power without significant negative effects (Craig, Mayo, 1993: 5). The Bill marks the first step towards giving the public their say and letting them manage development so it delivers their vision for their neighbourhoods. The Government believes the aspirations of local communities can be realised without the burden of nationally set targets (Communities and Local Government, 2011). According to Faga (2006), outside experts are no longer sufficient to prevent opposition, even objectively derived studies are testified by communities. As a result, many localities already encouraged community involvement as an integral part of the planning process. “Neighborhood groups expect more than an opportunity to voice concern. They expect to determine what happens in their community.” (Garvin 2006: x-xi). Sherry Arnstein (1969) draws attention to this difference between participation which is genuinely empowering and participation that is tokenism, or an empty ritual. “Participation without redistribution of power is an empty and frustrating for the powerless.” In his essay ‘Community Design’ (1974) Randolph Hester Jr. also makes the case for a genuine act of community empowerment proposing the need for a policy to input user values into the neighborhood design process. He states “meaningful participation is necessary...because only through involvement will users overcome their lack of understanding of how the decision making process operates to change their neighborhood.” (54).

Civic Voice welcome the plans to empower communities describing the Bill as the fundamental shift that “could liberate the knowledge and expertise locked up in communities and too often ignored by councils. Local communities care deeply about their area and know it better than anyone.” (Civic Voice, 2011). Their view suggests that problems can be more carefully defined through community involvement. The objective data projected in nationally set targets, may not represent the problem perceived by the community, for instance, top down decision makers may propose new roads to reduce travel time, whereas the community may wish for more industry closer to home. The Coalition has recognised the need for a genuine act to engage the community by decentralising decision making believing local authorities are in the best position to decide their needs and aspirations. Not only this, the Government has the added benefit of being able to capitalise on the cost sharing associated with voluntary community involvement. Nonetheless, there are implications of using an approach dependent upon the public participation and both understanding and trusting their subjective views.

4.0 Public Participation

Every intervention in the landscape generates possible public repercussions and incorporates persons interested for financial, political or philosophical reasons. Whether that is in terms of historic preservation, environment, relocation of families amongst others, and these can gain national interest. It's not just about the people that turn up for the consultation meeting; there are many others who do not attend. Members of the public will define their own level of interest. They will decide if they are a stakeholder in the project or not, if they know about it that is (Faga 2006: 68). At this point it is important to point out that in the Localism Bill it is now a statutory requirement for developers to hold pre-application consultation with the community. Stated chapter 4 of the Bill, developers must "publicise the proposed application in such manner as the person reasonably considers is likely to bring the proposed application to the attention of a majority of the persons who live at, or otherwise occupy premises in the vicinity of the land." There is no clear guidance on how this should be achieved and also implies that if a 'majority' will be made aware of the project, then a 'minority' will not be made aware.

4.1 Who is the public?

The bottom up approach will only work if the public take an active role in the decision making process. Firstly, we ask who is the public?

The 'public' is an aggregate term for a multitude of individuals. (Faga 2006) The public is segmented by demographic groups, some having less influence or access than others for example, low-income families, non-English speaking residents, elderly and the young.

According to Barbara Faga, the public can be segmented by:

- Physical proximity
- Extent of financial interest
- Political interests
- Philosophical principles
- Business or profession
- Level of community influence (Faga 2006 :69)

Based on both the personal level of interest the public has in the decision making process and the limitations of participation due to demographic segment, it is almost impossible to attain perfection in representation of the 'affected' public. It also raises the question; do the public want to be involved?

4.2 Will the public get involved?

According to a recent survey carried out by Ipsos MORI, only 15 per cent of people consider themselves to be involved in decision making at local level. Of those 15 per cent, the majority of 9% believe that they are unable to influence decisions. The evidence suggests that local do not feel engaged in the decision making process at present. However, when respondents were asked if they would like to be involved in local decision making, almost half (48%) said that they would like to get more involved. Although when examined in more detail, only 5% want an active involvement, 24% want a say and the rest would be happy just receiving information or do not care at all. A large proportion say the public should be more involved in local decision making and fewer say they will personally get involved but a larger proportion are happy not to be involved (Ipsos MORI 2011). This may suggest that if the public are to become more engaged in the planning of their local communities, they need to feel confident that the plans have been developed in the best interests of the community. But who or what do the community trust? Can they trust other community member's opinions and subjective views? We need to understand how the subjective views are made.

5.0 The Rise of Subjectivity

Postmodernism no longer ignored the subjective like the functional approach in Modernism, that treated people as standardised human beings. Take Le Corbusier's Modulor (figure 5.1) and Leonardo da Vinci's Vitruvian Man (figure 5.2) as examples of this where human beings are reduced to standard measurements and proportions. Decision makers need to consider those who don't fit the mould. We have discussed demographic differences but there are those with physical variation that do not conform to da Vinci's Vitruvian Man, for instance those who are tall, those who are wide and disabled people. As well as physical variation, there is also genetic inheritance to consider, their social, economic background, life chance and their individual psychological needs. The postmodern profession sensitised to these subjective differences.

5.1 The Subjective Landscape

Datascaping represents a positive approach to landscape – a collection of objective facts. But landscape is also a subjective thing, captured in an extract from the European Landscape Convention stating that landscape is “an area as perceived by people, whose character is the result of action and interaction of natural and/or human factors”. (Thompson 2009: 147) ‘Perceived by people’ is the key phrase that demonstrates that the landscape is not just a tract of land nor a picturesque view, it is a *place* “constructed as much through cultural perception and identities as through geomorphological process or deliberate human intervention.” (abid) How an individual may perceive their neighborhood and its wider landscape setting is intrinsically subjective.

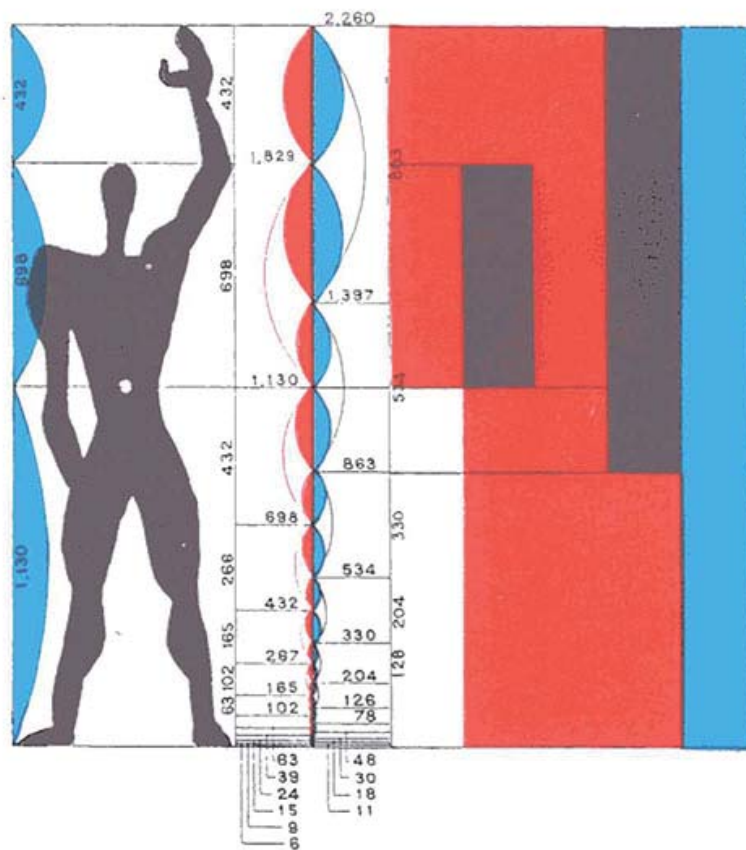


Figure 5.1
Le Corbusier Modulor

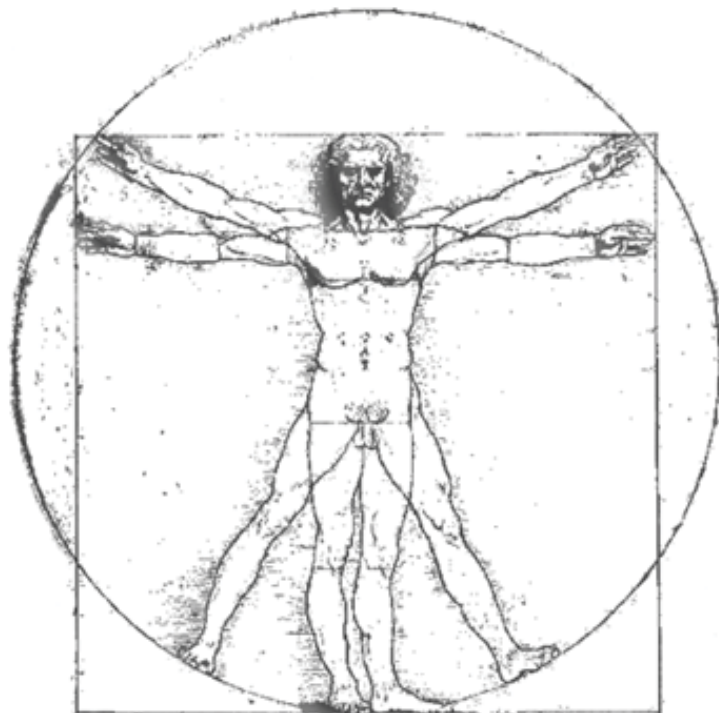


Figure 5.2
Leonardo da Vinci's Vitruvian Man

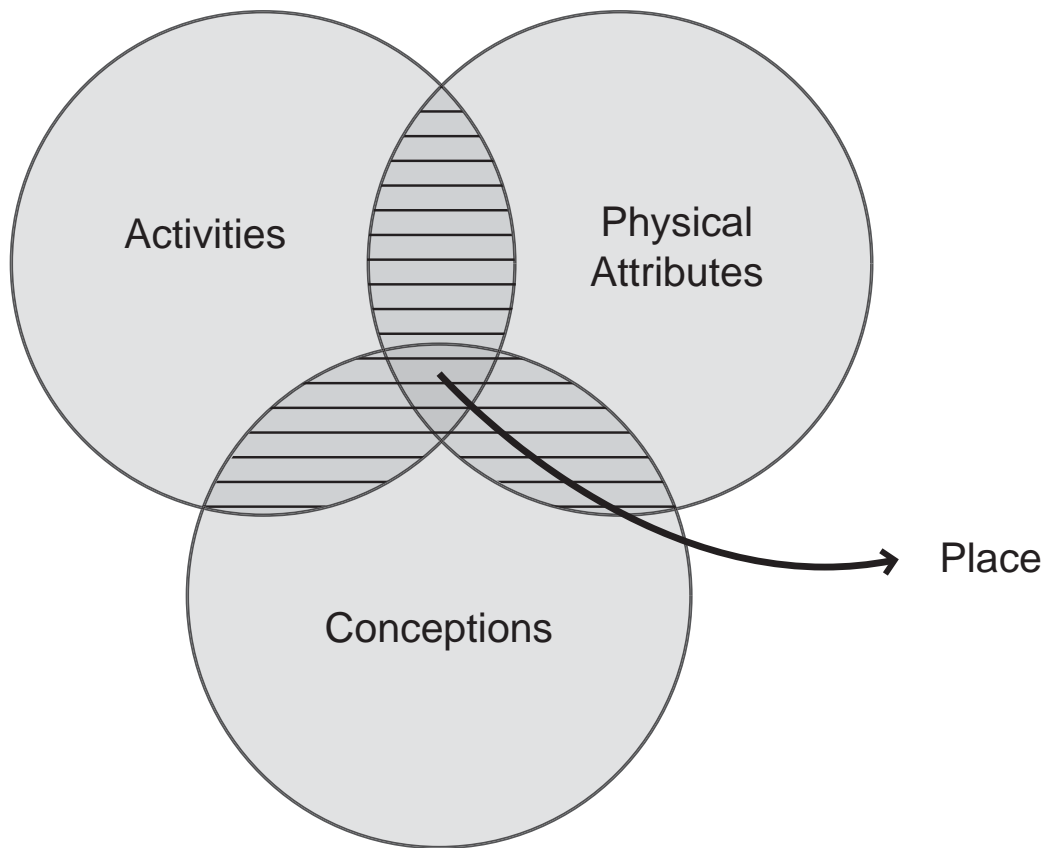


Figure 5.3

Constituents of place. (Canter, 1977: 158)

5.2 Understanding Place

Walter (1988) describes place as the location of human participation and experience. Place to him is topistic, giving primacy to feelings and emotional expressions. Canter (1977) is credited with much of the early work on place in environmental psychology. For him, place is the result of exchanges between actions, conceptions and physical attributes (figure 5.3). To know a place is to know its associated behavior, its physical parameters, and what perceptions people have of that behavior in that particular physical setting. (Thwaites, Simkins 2007) A combination of the material world, human behavior and individual psychological functioning are integrated to define place. The making of a place according to Menin (2003) is both a material construct and a construct of the mind. It is a continuous process of creation and Tuan (1980) emphasizes this dynamic nature based on human influence on it. Communities are bound together by the continuous process of creation and recreation of place. Places can be brought into being through co-operative activity and affirming significance through communication. Places can be produced through speech and gesture as well as physical characteristics. A place's stability depends on the way people talk about it.

But place also influences the human. This was of particular interest to Prochansky (1983) who gave significance to a sense of belonging between individuals and the sociophysical environment. Place to indigenous inhabitants is an invention; "it has been discovered by those who claim it as their own". (Augé 1995: 43) and is considered meaningful to the processes of self identity. Places distinguish ourselves from other people and also from the objects and spaces around us. (Thwaites and Simkins 2007) Canter (1977: 179) also adds "places represent in the most concrete fashion the great mixture of associations, actions and emotions which contribute to our conceptions of ourselves." Kevin Thwaites and Ian Simkins write in *Experiential Landscape* "people develop a sense of orientation that they come to identify and attach significance to particular locations, and that they can become aware of an overall sense of containment or coordination by they might identify their neighborhood" (2007: xiii). These experiences of place are fundamental to human life quality. There are perceptions that development of a place can lead to the loss of identity, and with it a loss of meaning. Groups are united by identity of place which is created by the spatial arrangement of physical elements "and that group has to defend against external and internal threats to ensure that the language of identity retains a meaning." (Augé 1995: 45). The counter argument is that aspirations of identity of place may also be expressed by the community. They may hold an ideology of what they wish the place to be, what physical attributes, behavior and conceptions it should hold. And due to the dynamic nature of place, these views are unique to an individual or group of individuals of a certain time and location.

5.3 Can We Trust Them?

The problem arises when we are faced with different and potentially conflicting perceptions. Different members of the community view it differently based upon individual life experiences. None of the opinions are wrong. Thwaites and Simkins (2007: 79) "they are all right because, just like a fingerprint, place perception is something that is unique to the individual and is driven by a raft of personal predisposition, preference, and

prejudice, influenced by cultural, social, educational and professional factors, and much more besides.” We have already identified that insiders and outsiders in particular, view the landscape differently. Outsiders typically objectify the landscape and can often arrive at odds with the insiders. Hough (1990: 18) states that “the manners, reference points, boundaries, and other symbols of everyday experience may be unseen or not understood by outsiders. But for those that live there these things are what gives a place its meaning and relevance.” There is evidence in environmental and social science research to indicate that significant differences may exist in the way that places are viewed from the trained professional, or outsider, and the non-specialist public, the insider. Subsequent research in landscape architecture also supports this idea. In the pilot work carried out by Thwaites and Simkins (2007) in the making of *Experiential Landscape*, public participation exercises exposed that where professionals identify with the visual clues and in the case of *datascaping*, the numerical clues, the user instead responds to what associations’ places have for them. These associations are often visually insignificant to the professional. They recognise the importance of community input as it reveals details of daily habit and emotional responses. However they also point out that there is a particular sensitivity to the bias of the views of users who participate in the process and the danger of exposing individual idiosyncrasy and personal preference disproportionately.

There is a concern among related professions and political groups about the lack of democratic accountability the Localism Bill proposes in relation to neighbourhood planning, where a majority of 50% of a local population can approve planning permission for a development that meets the aspirations of that group. The Local Government Association (2011) point out that the Coalition Government’s current approach “risks putting too much power in the hands of people who are not elected or removable by a democratic process, without enough assurance of inclusiveness, transparency and financial probity.” The Royal Town and Planning Institute (RTPI) also hold anxiety about the lack of democratic accountability in the Localism Bill, especially with the removal of a government at the regional tier. They state “We need to help ensure that no area is disadvantaged through lack of resources, knowledge or capacity from engaging in neighbourhood planning.” (RTPI, 2011). Another issue concerning the value placed on the subjective view is that the very nature of local decision making brings about issues of local interpretation. Each community has different values based upon the theories of place already discussed as well as its history for public participation. Faga (2006) highlights the potential impact of this pointing out that a community may take a more collaborative or a more insular approach to participation: “Depending on the locality, residents may clamor to be heard on public matters, or it may become an ordeal to get people to come to a meeting.” (ibid: 69) There may not always be a willing user group to draw meaningful information from, and without the drive to set targets for development, some localities may become static and inadaptably to the global forces which may act upon it. This leads us to ask about those unrepresented in the process, the views and aspirations of future generations. What about our future generations that may be affected by these global forces, they may be underwater for example or not have sufficient housing? It has been discussed that aspirations of place change with cultural, political, social and economic developments so can we trust local subjective views, or do we need an impartial objective method on which can act upon for a given purpose? For what we dislike today might be highly regarded tomorrow, so can we really throw a cordon around something because we think it holds a special meaning? We could ask, like Marc Trieb (1995; 2011) *Must Landscapes Mean?* Afterall “meaning is fluid and changes with time as well as the individual: even meanings that are lucid today become obscure in the future as society and its symbolic systems evolve.” (Trieb 2011:

132). Trieb concluded stating that we may never agree on meaning but we might accept common conditions for pleasure. After all, experience still depends on the human body e.g. thermal comfort, capability to perceive chroma, natural process, basic size and characteristics which are shared by virtually all inhabitants of the planet (Trieb 1995: 100).

Conclusion

Objectivists and subjectivists both have something to offer in the decision making process. Objectivists have an understanding of the sciences, geology, soils, climatology and now with ever increasing knowledge databases, population can be predicted and future human needs can be provided for. Subjectivists understand the way societies and cultures operate, the ways meanings are produced in place and encourage community participation to reveal aspirations and local knowledge that may not be exposed by an objective method.

At the start of this thesis I asked: Could datascaping be a viable or more intelligent approach to strategic planning as opposed to proposals indicated in the Localism Bill? For something to be described as intelligent, it must have a capacity to understand. Datascaping, with its intensive use of statistics has the greatest capacity to absorb and understand knowledge of the wider pressures our urbanising landscape face by reducing it into abstract space. President of ALSA, Desiree Martinez has recently written in Landscape that globally landscape architects should focus on an “openness towards unconventional and radical solutions to the complex problems facing our landscape.” Datascaping is both a radical and unconventional solution that does attempt to understand the challenges we face in the landscape, using the objectivity of data to drive design, moving away from the individualistic approach of the profession, that suggests a determined outcome often prescribed by the designer’s artistic intuition. Global issues can be tackled with the individualised input needed from user and site. The datascape can absorb knowledge infinitely from multiple professions, which can be meaningfully combined in a never ending dynamic process. Historically, this objective method represents the truth and reality and today it could allow us to see the reality of our future landscapes to which we can act appropriately on. The top down targets would represent the truth of what we must do for our future generations.

But this very process subjugates the subjective, removing associated meanings from the physical objects being measured and which, from discussing the theories of place, we have learnt are fundamental to identity and human emotional satisfaction. The proposals in the Localism Bill give primacy to the subjective opinions and wishes of the community allowing them to base decisions upon them. However, it has been highlighted that the way people perceive a place can be conflicting and the Localism Bill puts power in a community that is undemocratically accountable for, leaving the trust placed upon certain members of the community who come forward to make the decisions questionable. They may believe they are doing what is ‘right’ for the community but without the knowledge or control at a regional level, which was previously provided by Regional Spatial Strategies, the communities could become isolated from the national and global situation failing to provide resources for themselves and future generations or perhaps affecting other local communities.

Under the Coalition Government's drive for a genuine empowerment of the community in the decision making process coupled with the importance of community participation, to conclude this debate I propose a questionnaire to test public attitudes against both methods. There is a case for both the adoption of datascaping as a method that represents the truth and reality, and a case for the proposals in the Localism Bill as an approach that values the individual aspirations of local communities. The prominent difference between the two approaches is that of trust in the method. The hypothesis to be tested in the questionnaire would be that objective data can be trusted to represent the truth and therefore the community could trust the top down approach. Or, do they believe that the insiders view holds the most truth, as holding experience and knowledge of the place, even though it may vary from their own?

Bibliography

- Abbott, J. (2011) 'Landscape at Westminster.' *Landscape*, Summer 2011, p22-24
- Alexander, C., (1964) *Notes on the synthesis of form*. London : Distributed by Oxford University Press
- Arnstein, S. (1969) 'A Ladder of Citizen Participation' *Journal of the American Institute of Planners*, vol. nno.4, pp 216-224
- Augé, M. (1995) *Non-places : introduction to an anthropology of supermodernity*. London : Verso
- Benson, O., Stangroom, J. (2006) *Why Truth Matters p.12-14* in Thompson, I. (2009) *Rethinking landscape: a critical reader*. London : Routledge 2009
- Canter, D. (1977) *The psychology of place*. London: The Architectural Press.
- Civic Voice (2011) Remarkable Group. [Online] [Accessed 11 August 2011] <http://www.consultation-online.co.uk/localism-blog/civic-voice>
- Colvin, B. (1970) *Land and landscape: evolution, design and control* [1947]., 2nd ed., pp 272-274 in Thompson, I. (2009) *Rethinking landscape: a critical reader*. London : Routledge 2009
- Communities and Local Government, (31 Jan 2011) Localism Bill: abolition of the regional planning tier and introduction of the Duty to Cooperate Impact assessment [Accessed 11 Aug 2011] <http://www.communities.gov.uk/publications/localgovernment/localismregionalplanning>
- Conservatives (2010) Control shift: returning power to local communities, responsibility agenda: policy green paper no.9.
- Conservatives (2010) Open source planning green paper: policy green paper no.14.
- Corner, J. (1990) 'Discourse on Theory I'. *Landscape Journal*, vol. 9, p61-78
- Corner, J. (1991) 'Discourse on Theory II'. *Landscape Journal*, vol. 10, p115-133.
- Corner, J. (1999) *Recovering landscape : essays in contemporary landscape architecture*. Sparks, NV : Princeton Architectural Press
- Cosgrove, D. (1984) *Social formation and symbolic landscape* p.9 in Thompson, I. (2009) *Rethinking landscape: a critical reader*. London : Routledge 2009
- Craig, G., Mayo, M. (1995) *Community empowerment : a reader in participation and development*. London : Zed Books 1995
- Design methods for landscape architecture and garden design. (2008) Garden Visit. [Online] [2 Sep 2011] http://www.gardenvisit.com/history_theory/garden_landscape_design_articles/landscape_theory/history_design_methods
- Edwards, T. (2011) 'The Future for Architects?' *Landscape*, Spring 2011, p.43
- Faga, B. (2006) *Designing public consensus : the civic theater of community participation for architects, landscape architects, planners, and urban designers*. Hoboken, New Jersey. : Wiley
- Garvin. (2006) *Foreword* p.x-xi in Faga, B. (2006) *Designing public consensus : the civic theater of community participation for architects, landscape architects, planners, and urban designers*. Hoboken,

New Jersey. : Wiley

Greed, C. (1996) *Implementing town planning*. Harlow : Longman

Hester, R. (1974) *Community Design* p54 in Swaffield, S. (2002) *Theory in landscape architecture: a reader*. Philadelphia : University of Pennsylvania Press

Hough, M. (1990) *Out of place : restoring identity to the regional landscape*. New Haven ; London : Yale University Press.

Ipsos MORI, (2011) Do the people of Britain really want to join the government of Britain? [Online] [Accessed 1 Sep 2011] <http://www.ipsos-mori.com/Assets/Docs/News/Do%20the%20public%20want%20to%20join%20government%20of%20Britain.PDF>

Koh (1982) 'Ecological Design: A Post-Modern Paradigm of Holistic Philosophy and Evolutionary Ethic'. *Landscape Journal*, vol.1, p76-84.

Koolhaas, R., Sigler, J., Mau, B., Office for Metropolitan Architecture., Werlemann, H., (1994) *Small, medium, large, extra-large : Office for Metropolitan Architecture*. New York : Monacelli

Lincoln, Y., Guba, E. (1985) *Naturalistic Inquiry*. London : Sage 1985

Local Government Association (2011) Remarkable Group. [Online] [Accessed 11 August 2011] <http://www.consultation-online.co.uk/localism-blog/local-government-association>

Localism agenda: making sense of localism. (2011) Remarkable Group. [Online] [Accessed 11 August 2011] <http://www.consultation-online.co.uk/localism-blog/home>

Lootsma, B. (1999) in ed. Corner, J. (1999) *Recovering landscape : essays in contemporary landscape architecture*. Sparks, NV : Princeton Architectural Press

Maas, W. (1995) *Landscape*. P97 in Rijs, Jacob van., Maas, W., Koek, R., (2006) *FARMAX: excursions on density. 3rd Edition.*, Rotterdam: 010 Publishers.

Maas, W. (1996) *Datascares*. P98-103 in Rijs, Jacob van., Maas, W., Koek, R., (2006) *FARMAX: excursions on density. 3rd Edition.*, Rotterdam: 010 Publishers.

Maas, W., Mies van der Rohe Foundation, Institut français d'architecture, MVRDV, Berlage Instituut. (2003) *Five minutes city : architecture and (im)mobility : forum & workshop, Rotterdam 2002* Rotterdam : Episode 2003

Maas, W., NRW-Forum Kultur und Wirtschaft Düsseldorf., MVRDV. (2002) *RheinRuhrCity : the hidden metropolis : the REGIONMAKER*. Ostfildern-Ruit : Hatje Cantz.

Maas, W., Wall, R. (2002) *Linkages and flowcharts* p.130-141 in Maas, W., NRW-Forum Kultur und Wirtschaft Düsseldorf., MVRDV. (2002) *RheinRuhrCity : the hidden metropolis : the REGIONMAKER*. Ostfildern-Ruit : Hatje Cantz.

Martinez, D. (2011) 'A global definition of the profession should focus on ecological, economic and social inclusivity.' *Landscape*, Spring 2011, p.5

Menin, S. (2003) *Constructing place: mind and matter*. London : Routledge 2003

Mitchell, J. (1999) *E-topia : "Urban life, Jim - but not as we know it"* London : MIT Press 1999

- Mugerauer, R. (1994) *Interpretation on behalf of place: environmental displacements and alternate responses.*, Albany : State University of New York Press.
- MVRDV., Berlage Instituut., Maas, Winy. (2005) *KM3: excursions on capacities.*, Barcelona: Actar.
- MVRDV., Maas, W., Stroom. (1999) *Metacity datatown.* Rotterdam: 010 Publishers.
- Oppenheim, A. N., (2000) *Questionnaire design, interviewing and attitude measurement.* New Ed. London: Continuum.
- Proshansky (1983) 'Place identity: physical world socialisation of the self'. *Journal of Environmental Psychology* 3, pp. 57 -83
- Rijs, Jacob van., Maas, W., Koek, R., (2006) *FARMAX: excursions on density.* 3rd Edition., Rotterdam: 010 Publishers.
- Rose, G., Dorrian, M. (2003) *Deterritorialisations: revisioning landscapes and politics.* London ; New York : Black Dog Publishing 2003
- RTPI (2011) Remarkable Group. [Online] [Accessed 11 August 2011] <http://www.consultation-online.co.uk/localism-blog/rtpi>
- Swaffield, S. (2002) *Theory in landscape architecture: a reader.* Philadelphia : University of Pennsylvania Press
- The Localism Bill 2010. Volume one. (2010) [Online] [Accessed 29 Jul 2011] <http://www.communities.gov.uk/localgovernment/decentralisation/localismbill/>
- The Localism Bill 2010. Volume two. (2010) [Online] [Accessed 29 Jul 2011] <http://www.communities.gov.uk/localgovernment/decentralisation/localismbill/>
- Thompson, I. (2009) *Rethinking landscape: a critical reader.* London : Routledge 2009
- Thwaites, K., Simkins, I. (2007) *Experiential landscape : an approach to people, place and space.* London : Routledge
- Treib, M. (2011) *Meaning in landscape architecture and gardens.* New York : Routledge 2011
- Trieb, M. (1995) *Must Landscapes Mean?* p.89-101 in Swaffield, S. (2002) *Theory in landscape architecture: a reader.* Philadelphia : University of Pennsylvania Press
- Trieb, M. (2011) *Meaning in landscape architecture and gardens.* New York : Routledge 2011
- Tuan, Y. (1980) 'Rootedness versus sense of place'. *Landscape*, vol. 24, pp3-8
- Wall, R. (2002) *Global-local* p.28-29 in Maas, W., NRW-Forum Kultur und Wirtschaft Düsseldorf., MVRDV. (2002) *RheinRuhrCity : the hidden metropolis : the REGIONMAKER.* Ostfildern-Ruit : Hatje Cantz.
- Walter (1988) in Thwaites, K., Simkins, I. (2007) *Experiential landscape : an approach to people, place and space.* London : Routledge
- Weill, C., Melot, C., Vermande, E., Minnema, P., (no date) Rem Koolhaas/S, M, L, XL. [Online] [Accessed 22 July 2011] <http://www.peterminnema.nl/pdf/smlxl.pdf>