AESTHETICS AND ITS RELATIONSHIP TO SOCIAL SUSTAINABILITY IN URBAN TRANSPORT SYSTEMS

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ABSTRACT

The premise of this paper is that aesthetic issues form an important but generally neglected area of urban sustainability, and in particular of urban transport sustainability. The paper places aesthetics within the commonly-used three-way classification of sustainability involving environmental, economic and social aspects: aesthetics is seen as primarily concerned with social sustainability. Given that this is a potentially very broad issue, much of the paper is taken up with illustrating the various issues involved in the specific contexts of walking and cycling. The structure of the paper is as follows. Firstly, an outline of issues is given concerning the concept of *social sustainability*. This is followed by an introduction to aesthetic theories which highlights various historical debates about such theories, with such debates generally focusing upon philosophical and ideological questions. These theories are used to examine various aesthetic aspects of city living, including those concerning the built environment (using concepts taken from architectural and planning theory) and, more generally, the contribution of the built environment to the quality of the daily lives and sense of happiness of urban inhabitants. These two overall lines of thinking (aesthetic and social) are then applied to analysing examples of desirable futures (visions) for pedestrian and cyclist modes and the associated images of society that are consistent with these visions. A number of concluding comments are given to confirm the importance of aesthetics and its incorporation in transport planning as an aspect of social sustainability.

Keywords: walking, cycling, visions, social sustainability, aesthetics

1. INTRODUCTION

Overview
The premise of this paper is that aesthetic issues form an important but generally neglected area of urban sustainability, and in particular of urban transport sustainability. The paper places aesthetics within the commonly-used three-way classification of sustainability involving environmental, economic and social aspects: aesthetics is seen as primarily concerned with social sustainability. Given that this is a potentially very broad issue, much of the paper is taken up with illustrating the various issues involved in the specific contexts of walking and cycling.

This introductory section provides an overview of the classification of transport sustainability along three dimensions (environmental, economic and social), an introduction to aesthetic issues and an explanation of the importance of walking and cycling to such issues. Sections 2 and 3 then provide more in-depth discussions about social sustainability and philosophical approaches to thinking about aesthetics and the built environment, whilst Sections 4 to 6 examine the application of these ideas to walking and cycling.

Environmental, economic and social sustainability
The three-way distinction between environmental, economic and social sustainability is at the centre of European transport policy. For example, the (Renewed) Sustainable Development Strategy of the European Union (CEU, 2006) states the "overall objective of sustainable transport" as being:

> "To ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment"

However, as Petersen et al (2009) report, whilst the concepts of *environmental sustainability* and *economic sustainability* are relatively well understood (even if they are contested with respect to specific details) the same cannot be said about *social sustainability*; in fact there seems to be quite a lot of confusion as to what the term actually means. In the specific case of the EU, there is an emphasis upon *passenger rights* and *road safety* which, whilst being social issues, are clearly not the *only* social issues/impacts associated with transport. In response to this situation, Petersen et al (2009) have made a generic attempt to define social sustainability which goes beyond the narrow EU context. This approach is described in Section 2 below, which provides a basis for thinking about social sustainability in the remainder of the paper. However, it should be noted that this definition makes no explicit mention of aesthetic issues: it is the contribution of the current paper to make such an addition.

Aesthetic issues
Aesthetic issues cover a broad range of factors concerned with the attractiveness of the urban transport system and the built environment. These factors are generally concerned with attractiveness, which in turn has two main interlinked dimensions. Firstly, the fabric of the built environment (where it impacts upon the transport system) needs to be pleasing in an architectural sense. Secondly, the transport system and built environment should enhance the travel experience in the sense that any trip can have more to it than just the pure functionality of arriving safely at a destination. For example, the experience of making a trip might be greatly enhanced by the attractiveness of activities taking place on the street. This is not to say that every urban area has to look or feel like walking through, say, the historic parts of Venice or Rome, but rather that within the context of each urban area the

opportunities for local design, interest generation, use of the streets and a sense of belonging should be prioritised.

However, the aesthetic dimension of urban transport is notoriously difficult to understand rigorously in any sense that goes beyond intuitive generalisations (such as those provided above). A number of reasons for this can be given. Firstly, a particular urban location is frequently seen as being attractive precisely because it is unique, offering something that is not offered by other cities. Tourism often depends strongly upon the aura of uniqueness. Secondly, the question arises as to whether an urban location is attractive in an objective or subjective sense, making the issue of attractiveness awkward to conceptualise. For these reasons, aesthetic attractiveness of the city environment and its transport system are often ignored, or at least treated extremely marginally, in practical transport planning exercises (particularly operational planning). On the other hand, ad hoc evidence would show that this issue is highly important. In order to help initiate thinking about some of these issues, we review, in Section 3, the literature on the philosophy of aesthetics of landscapes and townscapes.

Relevance of walking and cycling

As said above, aesthetic issues cover many aspects of urban transport, and in order to achieve focus, it is useful to concentrate upon one or two particular aspects. For this paper we have chosen to concentrate upon walking and cycling since these modes illustrate very well many of the issues concerned with social sustainability in general, and aesthetics in particular. Furthermore, these modes have a high potential to address (at least in part) many of the problems which currently blight our urban areas, including high numbers of road accidents involving motorised vehicles, traffic induced air pollution and associated health issues, noise, severance and the health issues associated with increasingly sedentary lifestyles.

In the UK and many other places walking and cycling are secondary modes of transport – the environment for these modes and level of provision of facilities is often poor; levels of risk of injury are generally higher than for motorised modes; perceptions are often negative, while the status associated with these modes is generally low; and the role that these modes play in society and individuals lives has the potential to be substantially enhanced. Cycling and walking have a number of similarities – both involve the human body as a power system, they are exposed to the weather, both types of user are very vulnerable if involved in a collision with a motor vehicle and both are unlicensed. However, despite these similarities, the two modes are fundamentally different and have different roles and requirements. Cyclists typically cover greater distances than walkers and usually require a surfaced road. Walking is such a ubiquitous activity that it is often not regarded as a transport mode at all. However, even in highly motorised societies, it is an important component of almost all trips and in most places it still remains an important mode in its own right. Encouraging more walking could have a number of benefits including improvements in public health (Cavill, 2003) and greater public engagement with their local environment and use of public space (Gehl and Gemzoe, 2003), an example of its relevance to social sustainability. More generally, Litman (2006) suggests that improvements in “walkability” (the quality of walking conditions) could additionally improve basic mobility, community liveability, economic development and equity and lead to more efficient patterns of land use.

Cycling and walking are both widely recognised as environmentally friendly and healthy modes of transport and the potential for increasing levels is substantial (for example, in Britain, nearly two thirds of trips are under 8kms in length (42% under 3kms), and 25% of car trips are under 1.6kms); however, both have been in long term decline (DfT, 2007a). However, this negative picture of walking and cycling in Britain does not necessarily apply in other countries. For example, there are good examples of the development of cycling in

many Dutch, German and Danish urban areas, where a decline from the late 1950s until the mid 1970s was turned around into the success stories of today (Pucher and Buehler, 2008). The key behind such change is to understand what kinds of transport futures are desirable and meet the aims and objectives of society, whilst still retaining an essential degree of functionality and workability. Without the thinking to conceptualise and define different futures it is unlikely that anything other than incremental change will occur.

The contention of this paper is that to generate sufficient change in levels of walking and cycling, stimulus needs to come from change in social attitudes and aesthetic aspects which are, arguably, highly interlinked: these factors will be explored in Sections 4 to 6.

2. SOCIAL SUSTAINABILITY

Whilst the term *social sustainability* is used relatively frequently in the formulation of policy (alongside environmental sustainability and economic sustainability), the term is rarely defined with any precision and often is used simply to refer to *road safety* or *passenger rights*. Petersen et al (2009) attempted to make a comprehensive definition of social sustainability as being the maintenance of a high level of *social capital*. Whilst the precise definition of this concept tends to vary, depending upon the context in which it is being used, it can be intuitively understood as representing the collective social strength of a society. One frequent application of the concept of social capital is as an assessment indicator in studies sponsored by the UK Department for International Development (DfID), where it has been used as an element of the Sustainable Livelihoods Framework (SLF). The SLF, which is shown schematically in Figure 1, is concerned very much with how societies (and groups within society) can withstand shocks, (challenging) trends, and seasonal difficulties (referred to at the left of the diagram under the heading “Vulnerability Context”). The capacity to withstand such challenges is dependent upon five types of *capital assets* of a society (represented as a pentagon under the heading “Livelihood Assets”): these five types of asset include *social capital*. These assets are in turn influenced by government policies and institutions (shown in the centre of the diagram).

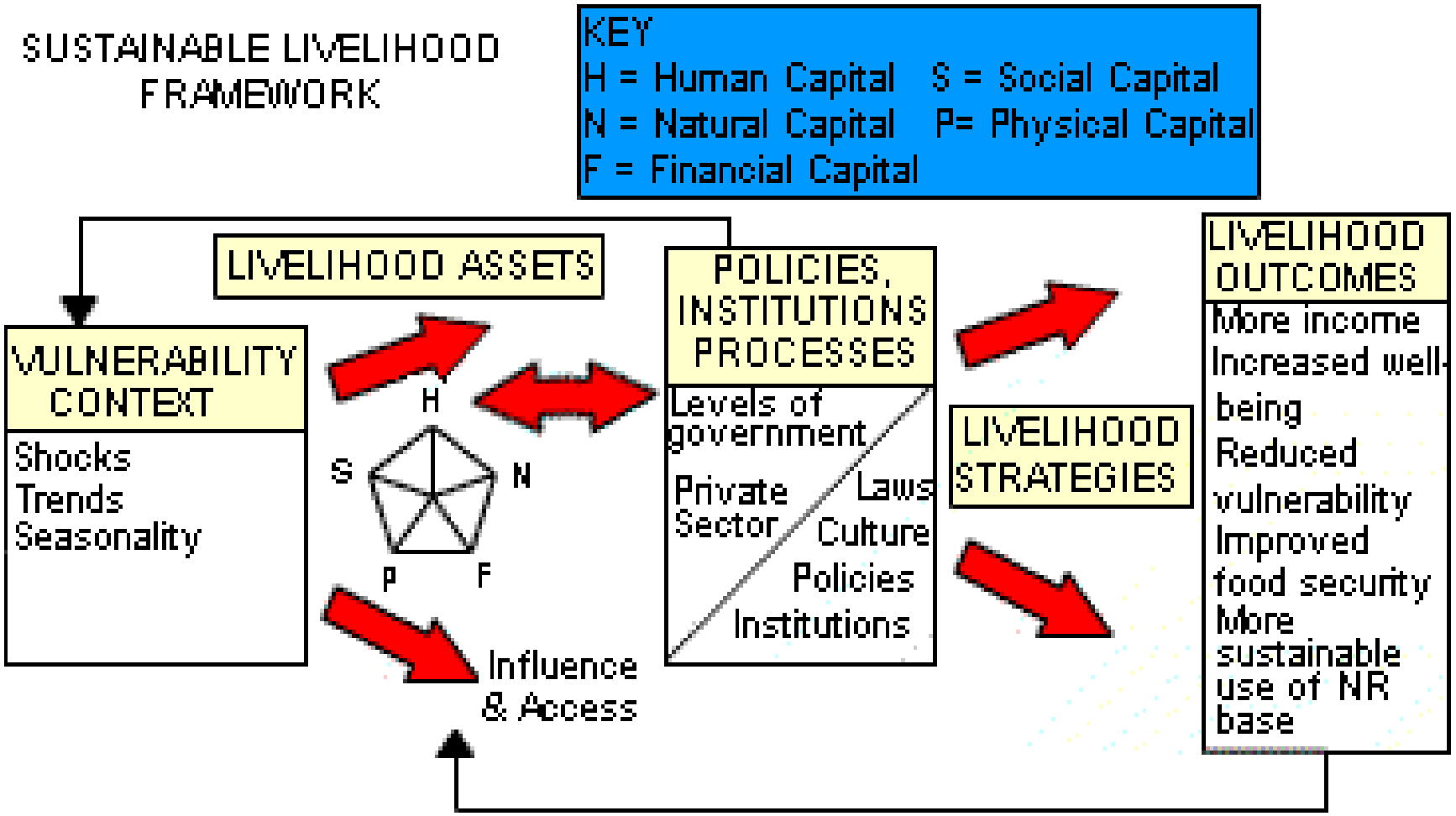

Figure 1: Sustainable Livelihoods Framework (from DfID Guidance Notes).

http://www.livelihoods.org/info/info_guidancesheets.html

Petersen et al (2009) considered two particular key aspects of social capital, *social cohesiveness* and *political capital*, which are further described as follows.

Social cohesiveness considers the cohesiveness of communities on both local, national, continental (e.g. EU-wide) and global levels. It is understood that such cohesiveness includes both a "collective dimension" concerning how well the community "binds together", as well as providing the basis for the "self-realisation" of individuals within the community (thus removing obstacles to individual and community self-empowerment). Given that social cohesiveness can be a complex concept to define, it is probably more easily further understood in the sense of "capacity to withstand threats" (along the lines suggested in the SLF described above). With respect to the transport sector, such threats arise from:

- Differences in mobility opportunities between different social groups and between different regions lead to problems of social exclusion. "Mobility" here can be understood in both the sociological sense of the "possibility for change in lifestyle and/or employment" as well as in the transport sense of "the physical means of movement by which such change might be facilitated".
- Differences in accessing "local facilities" (jobs, education, healthcare), where those individuals with difficulties in this respect are required either to travel more than they would desire or are forced (against their wishes) to migrate to another location. This type of phenomenon can be classified as "coerced mobility".
- A range of transport-related "security" problems resulting from tensions in society, including phenomena such as fear of walking alone or the threat from terrorist attacks on transport targets (planes, airports, trains, buses etc).

Apart from such threats, social cohesiveness also comprises an element concerning the "likelihood of citizens to treat each other with respect". In terms of the transport system, such respect leads to "polite behaviour", examples of which are: drivers voluntarily giving way to other drivers at road junctions (in accordance with local norms and rules); and drivers stopping their vehicles to allow pedestrians to cross the road.

In general, it is useful to distinguish between impacts of transport on social cohesiveness that are *internal* or *external* to the transport system, with these terms being explained as follows:

- Internal social impacts of transport are those that affect individuals as "participants" in the transport system, either as passengers or as transport workers. Policies which improve the experience of such participants, such as the enhancing of passenger rights or the raising of minimum working conditions for transport workers, have an impact on the overall social cohesiveness of society.

- External social impacts of transport are those that are experienced "outside" the transport system. For example, the impact of the transport system in terms of the possibility of accessing facilities (as mentioned above) would be an external social impact.

Various social impacts of transport will have both an external and an internal dimension. For example, road accidents can be seen to have an internal effect on the individuals involved in an accident, but an external effect on their families.

Political capital is closely tied with the concept of social cohesiveness. Political capital emphasises the capacity of the community, and individuals within the community, to take control (in a political sense) over their everyday lives and futures. In particular, with respect to the transport system, two "levels" of political capital can be considered:

- At the local level, political capital involves the amount of public participation in (and hence democratic control over) transport policy-making. With regard to such participation, political capital also involves the freedom of individuals to be able to express diverse points of view.
- At a higher level, political capital concerns the political strength of one´s city, region, country or transnational grouping (e.g. the EU) when negotiating with other bodies.

As stated above, the definition of social sustainability made by Petersen et al (2009) did not directly address aesthetic issues: it is the aim of this paper to make this addition. Whilst there is an easily-understandable intuitive link between aesthetics and social sustainability, as described in Section 1, this link is hard to pin down in a formal manner. It is therefore worthwhile, before pursing this link further, to examine some of the philosophical aspects of aesthetics and the built environment, as conceptualised by previous authors. This is the subject of the following section.

3. PHILOSOPHY OF AESTHETICS OF THE BUILT ENVIRONMENT

This section undertakes a review of literature concerned with the philosophy of aesthetics of urban form and landscape aesthetics more generally. Three introductory comments need to be made. Firstly there is a terminological issue about *landscape aesthetics*. The term *landscape* can (and often is) interpreted as a rural phenomenon and in fact a great deal of academic research has dealt with rural landscape aesthetics. However, as Steven Bourassa (1988) explained in a paper "Toward a theory of landscape aesthetics", this does not need to be the case, the term can also include urban scenes. It might be argued that it is preferable to use the term *townscape* rather than landscape for discussing the aesthetics of urban form. This might indeed be so, and a number of authors have done so, for example Taylor (2009) (which is fully discussed below). However, if a survey of literature were to be restricted to work focusing only on *townscape aesthetics* (hence ignoring broader research on landscape aesthetics), many insights relevant to the themes in the current paper would be lost. A second introductory comment concerns a point, also raised by Bourassa, that there is very little writing on urban landscape aesthetics. Given that this comment was made in 1988, it might be questioned whether there has been an increase in research with respect to such aesthetics since then; however, Forsyth and Crewe (2009) confirm that this is still the case.

The third introductory comment is far more significant than the previous two. In a vague and informal way, the idea of landscape aesthetics, in the sense of "the landscape looking attractive or unattractive", is intuitively straightforward. However, any attempt to go into the subject more deeply (as is required in the current paper), in order to pinpoint exactly what is meant by aesthetically attractive or unattractive, quickly meets many conceptual difficulties. It is thus suggested here that, as in any area which presents conceptual difficulties, it is useful to make a philosophical analysis of the issues concerned (and this explains the title of the section). This is not an original point of view. For example, Andrew Lothian (1999), in "Landscape and the philosophy of aesthetics: is landscape quality inherent in the landscape or in the eye of the beholder?", makes an ambitious review of two and a half thousand years of Western philosophical thinking on aesthetics in order to place the subject more firmly into landscape assessment. Such a review has dangers in erring on the side of oversimplification. However, Lothian recognises this problem as follows:

> "Thinkers and philosophers have addressed the issue of beauty for at least several thousand years and are perhaps the best placed, of all disciplines, to provide a comprehensive intellectual approach and framework for landscape aesthetics…. Philosophers spend lifetimes thinking and writing about a subject. The summary of their contributions on aesthetics which is presented here can scarcely skate the vastness or the depth of analysis and discussion of the issues which they have addressed. It is akin to flying across a range of high mountains and viewing only the top few metres of each, ignoring the thousands of metres which provide their foundation and enable them to project thus far." (p181)

In making his review, Lothian classifies the various philosophers that he considers into two categories: either *objectivist* or *subjectivist*. Whilst such a simple classification is clearly at variance with the depth and complexity of any philosopher´s thinking (which is stressed in the quote above) it is arguably useful for providing an introduction to readers not familiar with the history of aesthetics. Rather than try to summarise Lothian´s thinking about all the philosophers he covers, we concentrate on two particular figures that he describes: the eighteenth century philosophers David Hume and Immanuel Kant. This approach is "conventional", as demonstrated in a standard introductory text by Gardner (2003), who writes:

> "What explains the special character of aesthetic experience? Does a judgement that an object is beautiful report a fact about the object? Or does it express a feeling of the subject´s? What is beauty? Thinkers in the eighteenth century, above all Hume and Kant, took up these questions, and their view of aesthetic experience provides the broad framework within which most contemporary analytical aesthetics operates." (p232)

Lothian (1999) claims both Hume and Kant for the subjectivist approach that he advocates in his paper. With regard to Hume, he writes:

> "Hume rejected the objectivist view of aesthetics…….. For Hume, beauty resided not in the objects but in the mind. 'Beauty is no quality in things themselves. It exists merely in the mind which contemplates them, and each mind perceives a different beauty,' (Beardsley, 1966, p. 190). Rather than look for beauty in the nature of the objects, Hume looked to 'the constitution of our nature, by custom, or by caprice' ". (p184)

As is clear from this summary, Hume is more suited to being classified as "subjectivist" rather than "objectivist", given that he does not see the beauty of an object as being inherent in the object. However, this comment needs to be qualified by the last line that shows that Hume looked to "custom" for the assessment of beauty. Thus Hume is not, according to this statement, advocating subjectivism in the sense of an "anything goes" individualism in which each person is free to decide what is beautiful or not. Rather, the point is the conservative one that it can be observed that standards of beauty are agreed upon in any particular culture, and that any "member of that culture" will automatically share these standards. With regard to Kant, Lothian writes:

> "Kant developed a comprehensive philosophical framework for understanding aesthetics and beauty. He found that the aesthetic experience is the mind's representation of the object and, experienced with disinterest, is pure and is wholly subjective. The state of harmony between an object's imaginative representation and our understanding yields aesthetic pleasure…..which is free, without an ideal, and without cognitive determination is universal and common to all who experience it. ….Kant viewed beauty as subjectivist, in the eyes of the beholder, indeed it is as

> *experienced* by the observer. His analysis demolishes the objectivist paradigm." (p187)

From this statement, the claiming of Kant for "subjectivism" is as problematic as is the claiming of Hume for subjectivism, and the statement that Kant's analysis "demolishes the objectivist paradigm" seems rather hyperbolic. Certainly, (all) Kant´s (mature) philosophy is oriented to the "thinking subject" rather than "objects out there" (referred to as *noumena* or *things-in-themselves*) and is in this sense subjectivist. However, it is clear from the passage above that if aesthetic pleasure is "universal and common" then, as with Hume, subjectivism is not to be equated with a relativistic individualism.

An alternative way of viewing the difference between Hume and Kant (with respect to aesthetics) is provide by Terry Eagleton (1990) in "The Ideology of the Aesthetic":

> "Without some standard of objectivity, the subject is reduced to conferring value on itself, in what is at once the defiant boast of the modern ('I take value on myself alone!') and its hollow cry of anguish ('I am so lonely in this universe!'). It is the double meaning of humanism, which appears to know no middle ground between the mania of exerting its powers and the depressive knowledge that it does so in an empty space. So it is that Kant will strive to repair the subjectivist damage wrought by Hume's sceptical empiricism by restoring the objective order of things, but restoring it - since there can now be no lapsing back into a subjectless rationalism – from within the standpoint of the subject itself'. (p72)

Eagleton's description is useful in the current context since it throws light again on the issue of individualism (or, more accurately, individualistic relativism, in which everyone has a "different point of view"), already mentioned above. Hume and Kant were both writing at a time of increasing secularisation (*the Enlightenment*) when it was becoming increasingly unacceptable for phenomena to be simply explained in terms of their "divine origin". They were both attempting to chart middle ways between "divine explanations" and extreme individualism. A major cost underlying both their attempts (arguably more so for Kant due to his higher emphasis on the normative) was that their respective ideas of "universalism" and "customary behaviour" typically reflected the standards and behaviour of European middle-class men. Whilst this might have been seen as unproblematic in a patriarchal world dominated by European colonialism, there are obviously problems with such philosophies in the present age. However, the essential questioning between "objectivism" and "subjectivism", which is explored in their approaches, is still highly relevant. In short, whilst objectivist aesthetics might be dismissed as an outdated religious concept or a suspect mystical construction, it is not clear exactly what is meant by the alternative "subjectivist" approach. As is indicated by Lothian (1999), one potential consequence of the subjectivist approach is that the assessment of landscape quality can be "based on an assessment of the community's landscape preferences" and can "hence be defended politically and its findings applied with confidence". As such, it is broadly compatible with a democratic approach to planning. However, if the assessment methods are essentially empirical (as at present seems to be the case), questions always arise as to how people's attitudes (in this case towards landscape attractiveness" will change in the future. An assumption of no change is highly conservative (and basically Humean) and clashes with evidence that shows that people's views have changed in history. If change is assumed, how such change is conceptualised cannot (without being essentially conservative) be based solely upon past empirical evidence. But if it is based upon other factors (which are by definition unobservable) this creates a problem for empiricism. These thoughts will be seen to be relevant in issues concerning the aesthetic attractiveness of the future built environment for walking and cycling, as discussed in Section 4 below.

A further recent contribution to thinking about the aesthetics of townscapes is provided by Nigel Taylor (2009) who "presents a philosophical analysis of two central concepts and principles of urban design, namely 'legibility' and 'aesthetics'". The concept of legibility is based upon the seminal work of Kevin Lynch (1960), which is described as follows:

> "Kevin Lynch's book, The Image of the City, was published in 1960 and quickly achieved the status of a classic in urban design theory. Aside from its substantive conclusions, the book was significant methodologically, because the criteria or 'principles' of urban design that Lynch came to advance did not derive from his own intuitions and preferences, as was then the norm in most writings advancing normative principles of urban design and architecture. Rather, Lynch's recommendations about urban design emerged from empirical studies of how ordinary citizens perceived the cities they inhabited." (p190)

From a philosophical viewpoint, the emphasis upon empiricism is interesting (whilst Hume advocated empiricism as a philosophical approach, he never actually collected any data in a survey). However, Lynch's approach involves the (generic) problems associated with empirical approaches used in planning for the future, associated with future change in human behaviour, as described above. In fact it can be argued that all alternative empirical approaches described in the literature, whilst differing in details of indicators to be observed, share the same fundamental problems associated with empiricism. Hence, Lynch's approach, as described below by Taylor (2009), can be seen, when analysed on a philosophical level, as a representative of the family of empirical approaches for landscape assessment.

Taylor continues by explaining the concept of *legible* (or *imageable*) urban environments "whose physical form would be such as to enable people to form clear mental images and maps of them, on the basis of which they would find it easier to orient themselves and find their way around." In the context of the current paper, legibility can be seen to be an attribute of a functional built environment (to support walking and cycling) and separate to the aesthetic attractiveness of the built environment. This in fact is in accord with Taylor's viewpoint, who states:

> "Thus when we are perceiving and enjoying (or not enjoying) a townscape aesthetically, we are perceiving it for its own sake, and for the interest and enjoyment (or lack of it) we find there, and not, for example, as a means to orient ourselves or find our way around, and this is the key difference between perceiving townscapes for their legibility and perceiving them aesthetically." (p194).

Taylor gives a full description of an area of an (anonymous) English city that "contains all the hallmarks of Lynchian legibility". As a result of this description, Taylor concludes that this specific city area is "in many respects unattractive and ugly". He compares the area with the old city of Venice which is illegible but aesthetically attractive, and provides a number of further examples of cities and city areas demonstrating this phenomenon: the central area of Amsterdam; numerous medieval cities of Europe, such as those of Italy (e.g. Siena, Lucca), southern France (e.g. Carcasonne), or Belgium (e.g. Bruges, Ghent); and Georgian townscapes with regular geometrical plans and with similarly styled squares and terraces, such as Edinburgh New Town or Bloomsbury in London. What is significant about this description is that, unlike legibility (which can be assessed by observable indicators), aesthetic attractiveness simply depends, on a city by city basis, on whether people find the city attractive. Taylor recognises the problem associated with subjectivity in all this. His response (in the final part of the paper) is to state:

> "[A]lthough evaluative aesthetic judgements are subjective in the sense just described, it does not follow that the subjective judgements of a given collection of people about the aesthetic quality of a place will necessarily differ radically. For although their judgements are subjective, they may nonetheless be in accord or, it could be said, they may 'inter-subjectively' agree in their judgements. In fact, this possibility turns out to be very common, and notably with respect to the aesthetic quality of cities and environments. For example, in developing the arguments of this paper, judgements were made that, although the old cities of Venice and Amsterdam are not easily legible cities, they are fine cities aesthetically. Indeed, this is the author's subjective view. But it happens to be a view shared by a huge number of people; that, indeed, is why so many people visit these cities." (p201).

In short, the basic problem is not resolved. However, it would be surprising if it had been. All that can be concluded is that, considering the specific themes of the current paper, the aesthetic attractiveness of an urban landscape is extremely important for the promotion of walking and cycling, but is apparently impossible to define in terms of "objectively observable" indicators. These two points will be central to the analysis of pedestrian and cyclist street visualisations in Section 4.

4 VISIONS OF WALKING AND CYCLING IN 2030

In order to provide some concrete examples of urban locations against which to consider the more theoretical discussion in Sections 2 and 3 we have created three visions of walking and cycling in 2030, named *Vision One*, *Vision Two* and *Vision Three*. Visions One and Two consider future circumstances where change from the present has been generated through choice and a desire on the part of society for alternatives to the current situation in our urban areas (perhaps driven in part by a recognition of the unsustainability of the current situation). Vision Three has in part been forced upon society by external constraints, in this case a fuel crisis, so the vision represents one way in which society might choose to adapt to this circumstance. All three visions aim to create an environment where the quality of the experience is improved for those who already walk and cycle, but also an environment where substantially more people will walk and cycle. The context for all of these visions is the UK, though the generic ideas could be extended to other locations relatively easily.

Table 1 gives an overview of the current mode split (in the UK) and our assumptions for each of Visions One to Three. This is followed by short descriptions of the three visions, which are referred to below as *vision narratives.*

Table 1: Approximate mode split (trip stages) for the current situation and the different 2030 visions.

	Current situation (2006)[1]	2030 Vision 1	2030 Vision 2	2030 Vision 3
Walk	28%	32%	37%	40%
Cycle	1%	13%	23%	40%
Public Transport	12%	25%	35%	15%
Car	59%	30%	5%	5%

[1] – Source: National Travel Survey, 2006.

Vision One – European Best Practice

This vision of the future represents a widespread implementation of current best practice towards more sustainable travel behaviour. Examples of elements of this vision already exist in many urban areas around the world. Cities such as Delft, Groningen, Copenhagen and

Munster in Europe all display aspects of this vision, as do cities such as Portland in Oregon. This vision also reflects the best practice as proposed by documents such as the UK Manual for Streets (DfT, 2007). In this vision we foresee a moderate increase in walking and considerable increases in cycling relative to the current low base. Public transport usage has also increased, whilst car use within the urban area has substantially declined. One of the principal controls on car use is through adjustments to the amount and price of parking for cars. Legislation regulates between the different classes of road users in favour of non-motorized road users. In particular, local authorities are now required to implement a 'core network' of cycling paths and quality walking spaces with legal minimum levels of provision (including parking) based upon density of population. Furthermore, there is a legal mandate for a proportion of the local authority's yearly expenditure to be spent on making real improvements to each city's 'core network'.

Vision Two – A car-free public transport orientated future

In this vision there has been a substantive change in transport behaviour in urban areas, going well beyond the changes experienced in Vision One: walking, cycling and public transport have increased considerably compared to Vision One. There has been a further dramatic reduction in car use: car use in urban areas is curtailed through government action and through the positive appeal of alternative modes of travel. Most people do not own or use a car: the principal car users are those with mobility difficulties who cannot realistically use 'active' modes and have difficulties using public transport. We envisage that this vision is only achievable if there have been other major changes in society, leading to it being more cooperative and less individualistic and competitive: in the terms described in Section 3, there would be a high level of social sustainability. These fundamental social changes lead to a willingness and acceptance of the need and desirability of the transport changes involved.

Vision Three – A localised energy efficient future

In this vision serious constraints on global energy usage (resulting from a global energy crisis) have rendered the traditional car virtually obsolete and led to a reduction in motorised public transport. Parallel developments in 'smart technology' have enabled walking and cycling to become the predominant modes of urban transport. This vision of the future represents a radical shift towards more sustainable travel behaviour. Walking and cycling (Human Powered/Assisted Vehicles (HPVs)) are the predominant modes of urban transit. Buses and trams accounting for only 15% of the modal share are restricted to segregated and direct routes to and from the urban core. As in Vision Two, the principal car users are those with mobility difficulties who cannot realistically use 'active' modes.

Visualisations

Accompanying each of these visions, a number of visualisations have been produced for some stereotypical scenes within a hypothetical city with a population of around 250,000 people. Each of the locations chosen and visualised in the figures in this paper have characteristics which are easily recognisable and apparent in parts of most UK cities and urban areas. For each location we have provided an image of the situation now (in 2010) and images of how the location might look in 2030 for Visions One to Three. These visualisations are shown in Figures 2 to 5, accompanied by short descriptions of (present day) aspects of the scenes shown.

Figure 2 shows an older **Victorian Street** which would have been built initially for very different traffic requirements than is now the case and which has over the years adapted slowly to changing circumstance, not always successfully. It is very much constrained for space by the building line. On-road parking is the norm as the houses were designed before the need for parking was considered. The streetscape is cluttered and the mixed uses are difficult to accommodate. It is not an overly pleasant place to travel or live, and noise, safety and local air pollution are all issues.

Figure 2: Victorian Street

Figure 3 shows a **suburban shopping area** containing mid-range shops and perhaps a small supermarket. An area with many competing uses – in part a through route for both traffic and pedestrians, in part a destination in its own right. It is an area which has many problems, in particular safety issues for pedestrians, problems of parking and a complicated traffic mix, with public service vehicles and freight deliveries common.

Figure 3: Shopping Street

Figure 4 shows a more modern estate towards the edge of town (described here as **a 60s/70s estate**). This is essentially a residential estate, perhaps slightly run down and with the range of social problems which can characterise such areas. On the positive side there is a lot of space, as the estate was designed on a low density model, and hence, unlike the Victorian street, there is more room to construct a more walking and cycling friendly environment. The street scene shown has a large primary school on the left hand side of the road and hence some very time-constrained pedestrian issues at certain times of the day.

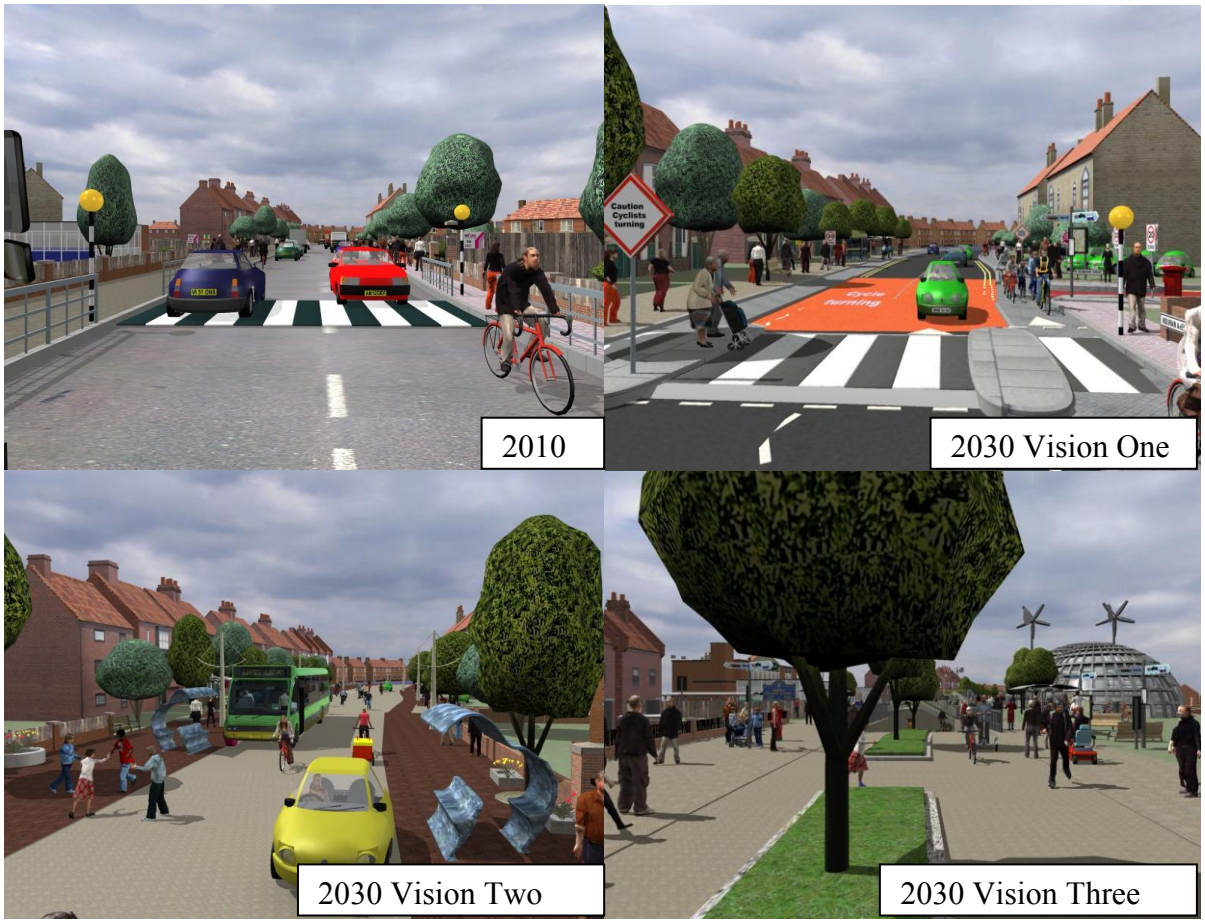

Figure 4: 60s/70s Estate

Figure 5 shows a **suburban interchange**, in this case a rail station. This is an important link between the outer neighbourhoods of the city and the city centre. Access to and from the station on foot can be difficult due to conflicts with traffic. There are limited facilities at the station for bicycle parking.

Figure 5: Interchange

The next two sections analyse these visualisations and visions from both aesthetic and social viewpoints. Section 5 makes an examination of the *visualisations* in Figures 2 to 5: whilst this analysis is primarily aesthetic, other social issues are discussed where relevant. On the other hand, Section 6 analyses the *vision narratives* from a more general social perspective.

5. AESTHETICAL ASPECTS OF VISUALISATIONS

This section will discuss a number of questions about aesthetics that can be raised on examining the visualisations described in Section 4. These questions consciously move from those of a "straightforward type", which do not rely too heavily on the philosophical background provided in Section 3, to those questions that are more "awkward", and do need such a background.

(a) What is the connection between the aesthetic attractiveness of visualisations and aesthetic attractiveness of real life?

It might be assumed that there is a correspondence between the attractiveness of a visualisation and the attractiveness of a scene that it represents. There are a number of problems with this approach:

- There is the generic problem associated with any representation: it cannot completely capture all aspects of the real-life scene that it represents. Without dwelling on this point too much, it only needs to be pointed out that, apart from any other difference, smell, noise and the sense of street activity mentioned in Section 1 are completely absent from all visualisations in Figures 2 to 5, whilst in real life these might be fundamental factors determining the attractiveness of a scene.
- It is possible to have an aesthetically pleasing portrayal of a scene that would, in real life, be aesthetically unpleasant: any art gallery will provide examples of such a phenomenon.
- When creating visualisations choices need to be made about time-of-day and weather. The visualisations provided in Figures 2 to 5 show daylight scenes in dry weather: these factors need to remain constant across visualisations in order to make comparisons. However, it should be remembered that a "real life" walking or cyclist lifestyle will inevitably involve some travel at night and when the weather is unpleasant.
- There is the issue of what happens just after and just before the scene is viewed: in reality a person's view of aesthetics would not be based on just one instant in time. There is also an analogous spatial issue to be considered. For example, in real life, someone might be thinking about what is just round the corner, hidden behind a bit of building: is there a vehicle there? In general it is the complete experience which informs aesthetics. Furthermore, experience of the location might also be crucial: is the "real life" viewer familiar with the scene?
- The angle of the view in the visualisations might well differ from that in real life. Examination of the visualisations in Figures 2 to 5 shows that the view is from a greater height than would be the case for a pedestrian, cyclist or car-driver on the street.
- Whilst the visualisations of 2010 show (actually existing) problems, such as the car parked on the pavement in the Victorian Street scene, the visualisations of 2030 (which are all attempting to solve such problems) are inevitably ideal in nature. To put this in another way, it would be strange to show a particular problem for 2030 unless it were considered unsolvable and thus in some sense intrinsic to the visualisation. If it is not intrinsic but only a (non-typical) malfunctioning of the system, the question arises "why show this particular (non-typical) problem and not another?". However, in reality it is clear that not all plans will be implemented without "blemishes", so that the visualisations in a sense represent a (potentially) unrealisable view of the future.

All these issues need to be taken into account when using the visualisations in a practical planning exercise. On a philosophical level, they provide a reason for downplaying (Humean) empiricism (as discussed in Section 3) when assessing aesthetic attractiveness of real life by using visualisations (assuming that the empirical study is concerned with peoples' reactions to the visualisations rather than their reactions "on the street").

(b) What are the aesthetic aspects of the 2010 visualisations?

Given the discussion in Section 3 between subjective and objective approaches to aesthetics, it might be maintained that a comprehensive analysis of aesthetic attractiveness of the images in Figures 2 to 5 could only be made by discussing the visualisations in the figure with a set of people with a broad range of individual perspectives. However, even without carrying out such an analysis, a number of "relatively objective" remarks can be made about the visualisations, and this is the approach taken here. An examination of the 2010 images in Figures 2 to 5 shows that, apart from the Victorian Street scene (which will

be discussed in the following paragraph), the images are "orderly" and, on first impression, appear to be relatively attractive aesthetically. Further consideration about attractiveness will depend though upon the specific perspective of who is viewing the visualisations. Given their purpose, it is appropriate to distinguish between the perspectives of car driver, cyclist and pedestrian. In general, we would say that all three visualisations (i.e. leaving aside the Victorian Street scene in Figure 2) are likely, without any further information about the characteristics of any particular viewer, to be attractive to car drivers since: there is no congestion; lane discipline appears effective for traffic at junctions; there seems to be an adequate supply of parking spaces (in any of the four visualisations); and there is little "encroachment" by pedestrians or cyclists upon the "car-drivers' space". Although more detailed examination might raise the question of "what will happen to cars in the Shopping Street when a bus is standing at the bus stop?", such a question does not seriously undermine the overall impression of attractiveness from a car driver´s perspective. However, from the perspective of pedestrians and cyclists, the visualisations have various problems which make them appear unattractive: severance for pedestrians in the Shopping Street; lack of cyclist facilities in all scenes; and a general feeling that they are "outsiders" (which of course is the mirror image of car driver's feeling that there is no encroachment on their space).

The Victorian Street scene in Figure 2 stands out as being rather different to the other visualisations. At first inspection, the scene appears rather jumbled, particularly as a result of the car parked on the pavement. From a car driver's perspective, a distinction needs to be made if the scene is being viewed from a "parking" perspective or from a "movement" perspective, given that the street has both these functions for car drivers. From a parking perspective, even though there appears to be no restriction whatever on parking, there might be some unease due to the possibility of the car getting scratched due to the pedestrian vehicle trying to squeeze through a highly restricted space. From a movement point of view, the street appears to present a bottleneck, with a bus passing between on-street parked cars on either side of the street. The surface is also broken and potholed. Thus, from both (car driver) perspectives, the street is not attractive. From a pedestrian perspective, the scene is clearly problematic due to the parked car on the pavement. Arguably, the street is most attractive (or rather, least unattractive) from a cyclist perspective, given that the cyclist is not affected by pavement car parking and can manoeuvre around the vehicles at the bottleneck point.

(c) What would be the aesthetic aspects of the 2030 visualisations from the perspective of "viewers in 2010"?

This question is more complex than question (b) addressed above since it is liable to have two interpretations, which can easily get confused. Firstly, it can be seen as asking about what viewers think they would find attractive in the future on the assumption they have exactly the same aesthetic sense as they do today. However, given that this premise seems questionable (as viewers might conclude when they think whether they have exactly the same aesthetic sense today as they had twenty years ago), it is preferable to concentrate on a secondary interpretation: would viewers in 2010 think that the scenes portrayed for 2030 be attractive if they existed "today" (so that the question is more concerned with short-term rather than long-term planning)? However, even this second interpretation creates methodological problems since, as explained in Section 4, Visions Two and Three represent futures in which there have been substantial step changes in society so that, according to the logic of the visions, such scenes would generally be unrealisable today (though there will be clearly be some exceptions to this general observation).

From a car-driver perspective, the visualisations shown for Vision One are highly attractive: there is hardly any congestion. If it is assumed that the Victorian Street is only used for

access purposes, and that there is an alternative car route, the scenes would appear to show a "car drivers' paradise". However, if the viewer of the visualisations considers the accompanying Vision One narrative, as summarised in Section 4, the car driver will understand better the main cause of lack of congestion: the restrictions on car use. This is likely to make the street scenes less attractive. By definition, cars (except for those for priority users) have been excluded from Visions Two and Three, so that, from a car-drivers' perspective these visions cannot appear very attractive and it would not be surprising if they preferred Vision One. (However, it should always be remembered that "car-driver" is not a fixed identity: a car-driver of today might be the user of another mode tomorrow.) From pedestrian and cyclist perspectives, Visions Two and Three are highly attractive (since this has clearly been intended in their design). The one potentially negative aspect for pedestrians concerns the 60s/70s Estate in Vision Two, in which there appears to be a conflict between children playing in the street and vehicular traffic (in this particular case a bus). From a "2010 perspective", this would appear to be rather dangerous.

(d) What would be the aesthetic aspects of the 2030 visualisations from the perspective of "viewers in 2030"?

Unlike questions (b) and (c) above, it is simply impossible to provide answers to this question based upon any (potentially or actually available) current empirical results since we cannot (in 2010) discuss issues with people from 2030. Thus, whilst, the answers to (b) and (c) could be seen as providing *a priori* thinking before (possibly) carrying out empirical research, the answers to question (d) must "stand alone". It is at this point that the philosophical thinking presented in Section 3 becomes highly relevant since it must form the basis upon which this question is answered. Before recalling details of this thinking, though, it is worthwhile stressing why it is important to do so. The justification is as follows. As argued above, questions (b) and (c) are primarily (if not completely) concerned with short-term planning. This is of course an important issue. However, if, as a society, we are interested in long-term planning, we need to be concerned with question (d): i.e. we need to be interested in how our (currently designed) street scenes appeal (or not) to subsequent generations. Apart from any other consideration, the issue of intergenerational equity is relevant here. Therefore, we would argue that, in the context of long-term planning, questions (b) and (c) simply provide a "warm-up" to question (d).

At first sight, it would be highly desirable if some objective measure of aesthetics were available, since this objectivity could be projected into the future (as we might project the law of gravity into the future). However, as described in Section 3, such a desire is unattainable without making some type of pre-Enlightenment metaphysical speculation. The alternative, as advocated by Lothian (1999) and others is to take a subjective approach to aesthetics. Two "subjective paradigms" were described in Section 3: an essentially Humean (empiricist) paradigm or a Kantian paradigm. However, due to the problem of "observability of the future" mentioned above (and the fact people might change their aesthetic opinions over time), the Humean paradigm is inadequate for judging aesthetic attractiveness as it might appear to future generations. Thus out of the two paradigms, the Kantian paradigm seems more productive. However, given the problems associated with the original version of this paradigm described in Section 3, that it universalises the perspective of European middle-class males, it needs to be applied critically.

In terms of a full answer to question (d), it would be superficial to try to speculate about the aesthetic view of people in 2030 without attempting to speculate about social factors that might cause these views. An introductory step along this route would be to interrogate the "visions narratives" that accompany each of the visualisations, as summarised in Section 4, in order to try to explore the possible attitudes of people that would be consistent with these narratives. However, such speculation is beyond the scope of the current paper.

6. SOCIAL INTERROGATION OF THE VISIONS

In this section we interrogate the vision narratives (from Section 4) in order to dig deeper with respect to issues concerned with aspects of social sustainability. Specifically, for each of Visions One, Two and Three, we ask a set of questions concerning those aspects of social sustainability discussed in Section 2, in terms of: the desirability of the visions; their representation of change (in 2030); the role of government implied in the visions; distinctions between the global/local nature of the visions; and the role of the visions in present-day planning exercises. A final related question, concerning the usefulness of the incorporation of aesthetics within the concept of social sustainability, is addressed in (the concluding) Section 7 below. Where phrases from Section 4 are used in this section they are given in quotation marks.

Are the visions desirable and, if so, in what respects?
It is clear that, in contrast to traditional forecasting techniques, by which (current) trends are extrapolated to a future target year, the methodological approach described in Section 4 is based upon the creation of *desirable futures* (which will almost certainly involve trend-breaks). Furthermore, it can be seen that much of Section 5, describing the aesthetic aspects of the visualisations, is concerned with the desirability of the visions: in fact, we would argue that the concept of *desirability* is at the heart of any aesthetic analysis. However, in addressing this concept, two awkward questions arise. Firstly, is Vision Three at all desirable, given that it involves a vision that has "in part been forced upon society by external constraints, in this case a fuel crisis"? A simple response to this question is that, given a (presumably) undesirable context, the response by society in terms of providing attractive walking and cycling facilities is desirable. However, this response immediately raises the issue of the dividing line between, on the one hand, walking and cycling aspects of the future, and, on the other hand, exogenous aspects: a clear dividing line (whilst attractive for conceptualisation) probably does not exist in reality.

A second awkward question with respect to desirability concerns the perspective from which something is judged to be desirable. This issue has great importance for social sustainability, and in particular for *social cohesiveness* (as described in Section 2): if certain groups find the visions undesirable, social cohesiveness will clearly be affected. Clearly, advocates of walking and cycling will find many of the aspects of the three visions desirable. However, it should not be assumed that all such advocates support all aspects of the visions. For example, some cycling enthusiasts might object to the fact that, in Vision One, the physical layout shown in the Victorian Street scene (Figure 2) would require them to move relatively slowly (at least in residential areas). Furthermore, those who are not advocates of walking and cycling might find many of the aspects of the visions undesirable. This is particularly the case in Vision One, in which walking and cycling are "not yet perceived…by all sectors of society" as being "more important and central to good transport planning…than at present". The narrative describes a number of restrictions put on car use that some might find excessively coercive. On the other hand, Vision Two builds in a high degree of social cohesiveness into its exogenous aspects, with its emphasis on underlying social change and rejection of (anti-social) individualism ("the city is much more 'civilised', insofar as it operates on a model of greater sociability and accessibility"): it is stated that such social change leads to "a willingness and acceptance of the need and desirability" of pedestrian and cyclist changes. However, as discussed in Section 5 with respect to aesthetics, there is a (potential) difference as to what people might find desirable in the future and what people find desirable

in the present day. If the purpose of the visions is to facilitate discussions in the present day, a clear distinction needs to be kept in mind with respect to the different time-frames involved.

A final point about desirability concerns the related issues of choice and political control, which is relevant to the *political capital* aspect of sustainability discussed in Section 2, particularly concerning public participation in political decision-making. Both Vision One and Vision Two "consider future circumstances where change from the present has been generated through choice and a desire on the part of society for alternatives to the current situation in our urban areas". It is important to identify exactly who is making this "choice", what political mechanisms are used for people to participate in the process of choice-making, and whether these mechanisms implicitly or even explicitly exclude any members of society

Do the visions represent systems that, in a social sense, are stable or are changing?
The methodological approach of creating of (future) visions is very similar to the approach used in the creation of (future) utopia, a subject that has captured the imagination of a number of thinkers over more than two thousand years (an early example of a utopia being the political organisation of society described by the Greek philosopher Plato). An important and continuing critique of many types of utopia is that they represent a future in which nothing is changing: for many people this represents a state of stagnation. An alternative to creating a fixed view of the future is to think of the future as a dynamic process, in which the representation of a specific future year is the representation of a particular stage in such a process. With respect to the three visions, various comments can be made. Firstly, the visualisations (shown in Figures 2 to 5) are inevitably snap-shots of specific moments in time, and it is difficult to judge from these whether they represent a static picture or a stage in a (dynamic) process. To make such a judgement, it is necessary to analyse the narrative descriptions of the visions. By definition, a large degree of social change must occur at some point before 2030 (particularly in the case of Visions Two and Three): however, it is not clear from the narrative descriptions as to whether change is still taking place in 2030. This issue is of great importance when considering the social sustainability of the visions, particularly with respect to political capital. If society is "static" it is likely that political decision-making is reduced to the managerial administration of the *status quo*, and it is also likely that the only (important) participants in this process are administrators. The political capital of such a society would be weak.

What is the role of government in the visions?
For Vision Two it is stated that "car use in urban areas is curtailed through government action" (and "through the positive appeal of alternative modes of travel"). This immediately raises a fundamental question as to whether strong government is essential for bringing about low energy futures, and in particular whether strong national government is necessary. This is the implication in Vision One, for which "cycling has been boosted by a legal mandate for a proportion of yearly expenditure to be spent on making real improvements to each city's 'core network'", implying that national government takes a strong role with respect to local government issues. Strong national government implies weak levels of local political participation and hence low levels of political capital.

If the exogenous social backgrounds are different to the present day, is this difference local or 'global' (national, continental or worldwide)? What is the relevance of this difference to walking and cycling?
This question is highly relevant to the aspect of political capital concerning the political strength of one´s city, region, country or transnational grouping when negotiating with other bodies (as presented in Section 2). As has already been mentioned, the exogenous

backgrounds of the three visions are summarised as: similarity to the present day (Vision One, though not in terms of the endogenous transport background which is quite different to all but a small number of locations in the UK); a high degree of social change (Vision Two); and a fuel crisis accompanied by a high level of technological development (Vision Three). It follows that the issue about *local* versus *global* dimensions of exogenous change is only relevant to Visions Two and Three. Taking Vision Three first, it was stated in Section 4 that the fuel crisis leading to the vision is global. However, it is underdetermined[1] in the vision description as to whether the social/political response to such a crisis is homogenous or heterogeneous on a worldwide level. With respect to Vision Two, the characterisation of global versus local is also underdetermined by the narrative description, and a number of highly different variants are consistent with the vision. At one extreme, Vision Two can be seen as representing an isolated "civilised" city enclave which has changed in the midst of a world that has (in relative terms) stood still. At the other extreme, Vision Two can be seen as involving a future in which high levels of social change have occurred throughout the world. Many other possibilities (such as change limited to regional, national or EU level) lie between these extremes.

What difference does the global/local distinction make for walking and cycling? A first point to make here is that the visions only describe urban transport, with virtually no mention being made about what happens outside the city. Clearly the political relationship between a city and its periurban/rural surrounding areas will have a large impact on many issues concerned with walking and cycling in the city. For example, if the surrounding areas of a pedestrian/cyclist-friendly city enclave are seen as being car-friendly, what will be the demographic effect? One scenario could envisage that those in the surrounding areas that are favourable to walking and cycling will migrate to the city, whilst those city-dwellers who feel attached to their cars will move in the opposite direction. At first sight this might seem to be an attractive solution. However, many boundary issues will inevitably arise, given that those living outside the city will presumably need to visit the city at some time, and those living in the city might wish to travel outside (which could be difficult without a car). Furthermore, a question arises as to whether the overall impact of this relocation might lead in fact to an increase in fuel use (aggregating the city and its surrounding areas). On the other hand, if periurban and rural areas become highly pedestrian/cyclist-oriented, what will this entail in terms of practical lifestyles in such areas?

What role might the vision narratives and visualisations play in helping to achieve (real life) step changes in creating pedestrian- and cyclist-friendly city environments?

The first point to make in answering this question is that when considering any use of tools in a planning process, it is important what planning paradigm is being adopted (analogies exist here between using visualisations and mathematical models in different planning paradigms, with use of the latter being described by Timms, 2008). There is clearly a large amount of literature about planning approaches (a typology of approaches is provided by Allmendinger, 2002). For present purposes it is useful to distinguish three planning paradigms: *instrumental rationality*; *communicative rationality aimed at consensus*; and *agonistic communicative rationality*. The instrumental rationality paradigm is the one traditionally described in manuals for transport planning; it involves the setting of objectives and the design of technical

[1] The comments in this paragraph about the visions being underdetermined should not be interpreted as a "criticism" of the vision narratives. Given that the main practical application of the visions concerns interactions with the public and decision-makers, there is a limit on how much information can usefully be contained within the vision narratives. It follows that many issues will not be explicitly covered. Of course, the vision narratives can always be extended to take into account new factors as they emerge, and in general it is useful to see "vision formulation" as an ongoing dynamic process rather than a one-off exercise.

measures by which such objectives might be reached. In general it is a planning process restricted to technocrats and policy-makers, with very little "public input". The other two planning paradigms can be seen as arising from a reaction against the exclusivity of the instrumental rationality paradigm, putting more emphasis upon communication between different actors (including "the public") involved or at least affected by the planning process. The consensus variant, typically associated with the philosopher Habermas, emphasises the need to reach agreement between actors; the agonistic variant emphasises the need for actors to express their differences (these variants are discussed by Fainstein, 2005, and Gunder, 2003).

Arguably, the most controversial aspect of the instrumental rationality paradigm occurs when objectives, and measures to reach objectives, are highly specified. This would in fact be the case if we were to say that it is fundamental that the scenes visualised for 2030 are actually attained, and that we must do everything to ensure this outcome. Such an approach implicitly binds a future generation to our way of thinking and runs against the principles of intergenerational equity. Furthermore it implicitly assumes that people in the future will necessarily have the same behavioural attitudes as those in the present day, a hypothesis that has been questioned in this paper. Rather, we would argue that the best use of the visions is in some form of communicative planning process which discusses the step changes that need to be made in society, and the urban transport system more specifically, in order to attain sustainable futures. Given the potential conflict that might arise between car-drivers, cyclists and pedestrians, as described at various points above, we would further advocate that the use of the visions is particularly appropriate for an agonistic planning process, allowing participants with different (current) mode behaviour to clarify their points of disagreement. Whilst it might seem ironic, we would claim that (long term) social cohesiveness is actually improved by allowing people to state their differences: the repression of differences, whilst giving the appearance of cohesiveness in the short term, is liable to lead to the build up of (unnecessary) resentments.

7. CONCLUDING COMMENTS

At the start of the paper, it was stated that "[t]he premise of this paper is that aesthetic issues form an important but generally neglected area of urban sustainability, and in particular of urban transport sustainability. The paper places aesthetics within the commonly-used three-way classification of sustainability involving environmental, economic and social aspects: aesthetics is seen as primarily concerned with social sustainability." Two points were being made here: firstly that aesthetics is an important issue, and secondly that it should be considered as an aspect of social sustainability. This concluding section will make some final comments about these two points, making particular reference to the walking and cycling visions that have been described in the paper.

As discussed in Section 3, the subject of aesthetics is highly complex. On the other hand, the motivation for considering aesthetics in urban transport is relatively simple: the travel experience needs to be attractive (in more than a functional sense), particularly if modes are to be chosen that are not the fastest. To put this in another way, if the car is not to increase its current dominance in many cities in the world, the use of alternatives to the car must be *enjoyable*. The concepts of attractiveness and enjoyment lie at the heart of aesthetics. Why, though, should this be considered as an aspect of social sustainability? Two answers can be given here, one relatively trivial and one more profound. The trivial reason is concerned with taxonomy. Sustainability is, as stated above, typically considered as having three dimensions: economic, environmental and social. Aesthetics is clearly not an economic issue and, given that it is concerned with human subjectivity (as described in Section 3), it is not an

environmental issue either: it must therefore be considered as a social issue. However, there is a more important reason for classifying aesthetics as social and this is concerned with processes of change. As discussed in Section 6, many social issues, concerning social cohesiveness and political capital, arise for attaining high levels of walking and cycling (and thus, according to the argument in Section 1, for gaining urban sustainability more generally). We would argue that the successful resolution of these issues depends upon walking and cycling being generally seen as being desirable because they are enjoyable, with a (genuine) consensus arising on this. This approach for increasing walking and cycling can be seen as being an alternative to convincing people that they *ought* to walk and cycle (and *ought not* to use other modes, particularly cars), either through making them feel guilty or by penalising them in some other way. We would argue (for reasons that are intrinsic to the arguments presented in Section 6) that such approaches will fail on a number of grounds. We would furthermore argue that it thus follows that aesthetics should be seen as a key component of social sustainability with respect to the planning of urban mobility.

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