Article:
Timms, PM, Tight, MR and Watling, DP (2014) Imagineering mobility: Constructing utopias for future urban transport. Environment and Planning A: International Journal of Urban and Regional Research, 46 (1). 78 - 93. ISSN 0308-518X

https://doi.org/10.1068/a45669

R45/669 (ex 45/343)

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Imagineering mobility: Constructing utopias for future urban transport

Abstract

Over the past 50 years a growing body of work has sought to address the problem of planning for transportation in the long term future through scenario-building. Such thinking has generally been restricted to issues concerned with environmental sustainability and the 'images' of future transport so created are usually weak in terms of their social sustainability content, either treating social issues superficially, or ignoring them entirely, or even creating images that are socially undesirable. At the same time, there has generally been a marked decrease over the past 20 years in socially-oriented utopian thinking. As a direct result of these two factors, hardly any consideration has been given recently to imagining socially sustainable views of transport in a future utopia. The key underlying aim of this paper is to provide some background thinking about how this lack might be addressed. To do so, it examines concepts about utopia in terms of their form, content and function, and considers possible reasons for the recent decline in utopian thinking and their 'replacement' by a type of futures-thinking that is referred to as dystopian avoidance. It then examines transport characteristics of utopian thinking in urban planning in the 20th Century and considers various 'antinomies of transport' with respect to future utopias. Based upon the insights gained, the paper comments on two existing 'practical' sets of transport-related scenarios in terms of their utopian and dystopian characteristics. One particular result is that the utopian aspects of these scenario sets in terms of their social content are relatively weak, in line with the hypothesised recent general decline in (social) utopian thinking. Various conclusions are made which emphasise the usefulness of utopian thinking in transport planning, particularly in participatory approaches. It is suggested that three elements of the transport system should be separately 'utopianised': the mobility of people and goods; physical aspects that facilitate or inhibit such mobility; and the system of governance with respect to formulating and implementing transport policy.

Key words: Utopia; exploratory scenarios; transport planning; environmental sustainability; social sustainability

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1. Introduction

Strategic transport planning over the past 60 years has, by definition, had an 'orientation to the future'. However, until relatively recently, remarkably little interest has been shown in most mainstream transport planning in descriptions of the future, apart from deterministic extrapolations of current trends. Arguably, the main factor changing this situation has been the well-documented environmental sustainability problems associated with transport if extrapolated trends were actually to occur, particularly concerning their impact on climate change and use of natural resources. There is thus an increasing amount of research interest in methods that imagine environmentally-friendly futures, and construct storylines describing how they might be achieved. However, two immediate points can be made about such futures. Firstly, they frequently contain little description apart from their central environmental characteristics, in terms of levels of CO_2 emissions and energy use (and the amount of traffic consistent with these quantities). Secondly, with notable exceptions, little attempt is typically made to create overall images of the society that are consistent with such emissions and/or energy use. In particular, there is typically little (if any) description of the social characteristics of such futures. Thus, whilst they can be claimed to be environmentally sustainable, it is not clear if they are socially sustainable. Two problems immediately arise. Firstly, a lack of social sustainability might undermine any attempts to attain environmental sustainability. For example, if owning a car is a significant factor in maintaining enhanced social status, it is unlikely that environmental sustainability can be attained in a society which stresses the importance of status distinctions. Secondly, the methods by which environmental sustainability might be achieved are often described in ways that are highly simplistic in a governance sense: for example, policies are to be 'implemented' by strong visionary leaders and the implicit assumption is that these will be generally accepted.

Resulting from these comments, a key aim of the current paper is to think about how images of future transport that combine both environmental and social sustainability might be constructed. We consider that it is useful to do this in the context of utopian thinking, where a utopia is defined as being a highly desirable future that involves radical change throughout society[1]. Given that utopian thinking is virtually non-existent in transport planning, it is necessary to look beyond the transport sector for insights.

As way of 'setting the scene', Section 2 provides a brief overview of futures-oriented methods in transport studies, based upon a commonly used distinction between forecasting, visioning/backcasting and exploratory approaches. Section 3 provides an overview of issues concerned with utopian thinking, distinguishing between form, content and function, as well as looking at the interaction between utopias and dystopias. Section 4 reviews the transportation aspects of past images of utopia in urban planning, creating a set of archetypal images of transport utopia. In doing so it distinguishes between three aspects of the transport system: (1) the mobility of people and goods; (2) the physical aspects (including transport infrastructure, the built environment, vehicles and technology) that facilitate or inhibit such mobility; and (3) the system of governance with respect to formulating and implementing transport policy. Section 5 uses the insights from Sections 3 and 4 to comment upon elements of two well-established scenario sets that have a strong transportation aspect.

2. Three approaches to thinking about the future

As pointed out by various authors (e.g. Anderson, 2010), there have historically been a very large number of ways of thinking about the future, from fortune-telling to more 'scientific'

[1] Though see in Section 3 the discussion of a free-market utopia which, on a global level, only includes radical change in those parts of the world that do not as yet have fully developed neo-liberal economies.

approaches. It follows that the approach taken for classifying methods for thinking about the future depends on the context in which 'futures' thinking is taking place: e.g. if the context were one of fortune-telling and soothsaying methods, the classification approach would be very different to that required for prediction methods in physics. In the current paper, the context is one of transport planning and a key concept is that of the transport scenario, which is defined in the present paper as a 'snap-shot of a future state of transport'. Following Banister and Hickman (2013), three distinct approaches have historically been used for constructing transport scenarios: forecasting, exploratory approaches and backcasting/visioning. These approaches are summarised in Table 1 and discussed further in the following sub-sections. A key distinction between these approaches is that, whilst forecasting starts with the present situation and extrapolates forward to the future, the two other generic methods start with one or more images of the future and 'work backwards' to understand how they might occur.

Table 1: Approaches to the future

	Forecasting	Visioning/ Backcasting	Exploratory futures
Definition	Two principal types of forecast: (1) Do-minimum forecast: an extrapolation of current trends to the future (2) Do-something forecast: the	A vision is defined (in this paper) as an 'image of a desirable future', with visioning being the construction of such images. Frequently, a vision is considered to be a	Exploratory futures are typically constructed as sets of differing possible futures (which might or might not be desirable). Such sets are usually defined as global alternatives that are 'out of the control' of any particular organisation. In some cases,

	prediction of the impact of implementing a specific transport policy (or set of transport policies), against a background in which current trends are extrapolated	type of goal. Backcasting is defined as the construction of one or more pathways for attaining a vision.	these futures are accompanied by a storyline describing how the future unfolds.
'Starting point'	The present	The future	The future
Examples of methods for construction	'Traditional' transport modelling exercises carried out in a large number of planning exercises since the 1950s. Whilst not essential to the approach, most forecasts in transport planning are made using computerised modelling software packages.	Local authority policy formulation; Participatory planning exercises; Academic research exercises; Creative exercises by individual writers	Research carried out by environmentally-oriented organisations; 'Foresight' workshops; Studies commissioned by governmental and international organisations; Academic research exercises.

2.1 Forecasting

The use of scenarios in transport planning is well-established. For example, Schofer and Stopher (1979) state "The ultimate objective of any scenario-generation scheme is to produce a framework which supports directly a new long-range transportation planning process, including generation of sensible alternatives, forecasting travel demand and system performance, and impact and cost evaluation". It is assumed in this definition that a process of forecasting will be used for thinking about the future, i.e. a process by which a prediction is made as to how the present transport system evolves into a future transport system.

Such a process would be highly effective if one could have relative certainty about the predictability of the elements in the system, and under the premise that 'primary effects' may be readily identified. Drawing parallels with other systems and disciplines, we can see how such a premise of predictability is appropriate in areas such as Newtonian physics. However, as explained by Timms (2008), for systems such as transport which involve a high degree of human behaviour, both individual and institutional, 'traditional' approaches to forecasting, as have been used in the vast majority of transport planning exercises, have some major defects, particularly if used for the long term future. Evidence of such defects, in terms of observed predictive inaccuracies associated with past modelling exercises, has been reported by Flyvbjerg et al (2005), Bain (2009) and Wolde and Odek (2011).

Apart from the "delusion and deception" associated with project managers (Flyvbjerg et al, 2009), three specific factors can be identified that help to explain these predictive inaccuracies. Firstly, traditional forecasting models represent change in mobility behaviour in a deterministic fashion, in accordance with observable changes from the near past or present (Rasouli and Timmermans, 2012). They are hence limited when predicting different types of

(as yet unobservable) mobility behaviour that might occur in the future (Curtis et al, 2010). Such a defect is particularly serious if there is an interest in futures that are 'very different' to the present (Anable et al, 2012; Ran et al, 2012). Secondly, traditional forecasting-based modelling does not represent—or only represents in a highly simplified way—the future actions of organisations such as government authorities (Timms, 2008) or transport suppliers (Mula et al, 2010) in response to future conditions, both within the transport sector and outside. Thirdly, exogenous factors from outside the transport sector but which impact on transport, such as economic growth or population growth, are typically treated in a highly simplified manner within the transport forecasting model, i.e. they are 'taken as given' from some other forecasting source.

2.2 Visioning/backcasting

As shown in Table 1, a vision is defined (in this paper) as an 'image of a desirable future', with backcasting being defined as the process of constructing one or more pathways[2] for attaining a vision. One important use of visioning lies in participative planning approaches. From the perspective of the late 1990s, Shipley and Newkirk (1998) reported how "[v]ision is so popular in planning that it is difficult to pick up a professional journal from the mid-1990s and not encounter it", although "[v]ision and vision-related words are rarely found in planning periodical literature before the late 1980s". From a perspective of almost 10 years later, Shipley and Michela (2006) reported that "[i]n spite of over 20 years of visioning and plans with a stated vision there has been very little follow-up evaluation of results or critical study of the efficacy of visions and visioning. In the last half dozen years, enough difficulty

[2] Pathways, as used in backcasting, are analogous to storylines, as used in exploratory approaches. The main difference, for our present purposes, is that pathways involve an explicit account of agency for achieving a particular vision (typically with respect to a local government authority in the case of city planning) whilst storylines do not.

and discontent has manifested itself to cause researchers to begin a serious evaluation of visioning".

With respect to transport, practical manuals exist for creating visions in participative planning exercises (e.g. Federal Highways Agency, 2011, and Cambridge Systematics, 2012) and there are a small number of recent vision-focussed academic articles (e.g. Moriarty and Honnery, 2008, Lemp et al, 2008, Gil et al, 2011, Tight et al, 2011). In general though, more emphasis is generally put on the backcasting aspect of the visioning/backcasting duo, frequently with a vision of the future being reduced to numerical targets such as reductions in CO_2 emissions or energy usage, along with the levels of vehicular traffic consistent with such a target. As a result, the visioning/backcasting process is typically referred to as backcasting rather than visioning, and the latter aspect is often not mentioned explicitly. The theory of backcasting with respect to transport has been described by Dreborg (1996) and Höjer and Mattsson (2000). The technique has been employed in various EU-sponsored transport research and consultancy projects[3]. In the academic literature, transport backcasting exercises have been reported by: Geurs and Van Wee (2004), Åkerman (2005), Schade and Schade (2005), Robèrt and Jonsson (2006), Åkerman and Höjer (2006), Hickman and Banister (2007), Harwatt et al (2011), Mattila and Antikainen (2011), Barella and Amekudzi (2011), Höjer et al (2011), Dubois et al (2011), Banister and Hickman (2013), Crozet and Lopez-Ruiz (2013) and Zimmerman et al (2012). All these exercises emphasise environmentally-friendly futures.

2.3 Exploratory approaches

Exploratory approaches construct images of possible futures: some of these futures might be considered desirable, others undesirable, whilst others are 'mixed'. In general exploratory

[3] Information about such projects can be found at the Transport Research and Innovation Portal: http://www.transport-research.info

approaches construct scenario sets, with any set containing at least three scenarios representing alternative futures. The main use of such scenario sets is to facilitate long-term strategic thinking by organisations (both public and private) in the context of various global uncertainties. Macdonald (2012) analyses 20 sets of such scenarios constructed between 1990 and 2008, whilst Hunt et al (2012) identify more than 450 scenarios constructed over the period 1997-2011. The latter emphasise the influence of a set of scenarios first proposed by the Global Scenarios Group (GSG) in 1997 (Gallopin et al, 1997). Of particular relevance to the current paper are two versions of a Great Transitions future utopia: Eco-communalism, emphasizing a de-urbanised ruralism; and the New Sustainability Paradigm, which is more urban-oriented (Raskin et al, 2002). Although the GSG scenarios are not focused upon transport, they include a small transportation element. Van Vuuren et al (2012) review 11 scenario sets (including the GSG set) that have been used over the past 10 years in global environmental assessment, though there is little emphasis on transport in these sets. Underlying all these reviews are attempts to identify 'archetypal' scenarios, typically by demonstrating how a particular scenario in one set is equivalent to particular scenarios in other sets. In terms of transportation, two scenario sets (not included in the previously mentioned reviews) with a strong transport focus are: Megacities on the Move (Gazibara et al, 2010) and Intelligent Infrastructure Futures (IIF) (Curry et al, 2006). These will be commented upon in Section 5. The IIF scenarios have been used by Armstrong and Preston (2011) for thinking about alternative futures for UK rail transport.

Futures-oriented exercises often include both exploratory scenarios and visions. In some cases, a particular member of an exploratory scenario set might be a vision. In other cases a set of exploratory scenarios might be created which are assumed 'out of control' of a particular actor (e.g. local government authority) but which provide alternative background

contexts for visions to be created in line with the desires of the specified actor, covering aspects which are assumed to be 'within the control' of the latter (an example in the transport sector being Tight et al, 2011).

3. Utopias and dystopias

The term utopia is used extremely widely and has a large literature associated with it, both academic and popular: a historical survey of concepts of utopia is provided by Levitas (2010). Probably as a result of this widespread use, the term has many different connotations: for the purposes of the present paper, a definition of a utopia as a 'highly desirable future' is used. Following Levitas, a distinction is made between 'form', 'content' and 'function' of a utopia, respectively addressing the following questions: 'what are the temporal and spatial aspects of utopia?'; 'how is life portrayed in the utopia?'; and 'what is the purpose of constructing utopia?'.

Two alternative temporal forms of utopia can be identified from the literature about utopia: utopia as a static image[4] and utopia as a dynamic process. Both forms have their advantages and disadvantages. A utopia constructed as a static image is generally easier to visualise: such visualisations can focus attention upon aesthetic questions as to how a desirable future world might physically appear, which can be hard to capture in verbal narratives (Timms and Tight, 2010) and can thus be useful in participative planning exercises. However, static utopia have

[4] It follows that a static utopia is a particular type of vision (as defined in Table 1) which is 'especially desirable'.

traditionally run the risk of being over-prescriptive in terms of detail, thus conveying the impression that they are closed in terms of possibilities of improvement, and more generally in over-emphasising one specific ideological perspective in a situation when people hold conflicting perspectives. For these reasons, utopias have often been considered as authoritarian blueprints. On the other hand, a utopia constructed as a dynamic process is likely to achieve a desirable sense of openness but, unless care is taken to make explicit the conflicting viewpoints in this process, it runs the risk of descending into a set of uncontroversial platitudes. Various solutions can be identified for overcoming such problems. For example, the process might involve "a historical succession of visions of the future in which each vision will at one moment in time be replaced by a more appropriate one… since any new apprehension of the present will provoke a new idealisation of the future." (Van der Helm, 2009, p12). This solution achieves a certain degree of openness, but still involves the potential problem of over-prescriptiveness, at any particular point in time, associated with the term "idealisation". Alternatively, Gunder and Hillier (2007) advocate an approach which, seeing planning as a therapeutic process, replaces the term utopian by utopic, where the latter is described as "a practice which is critical, inclusive, and dynamic; performative rather than prescriptively normal."

An important spatial question concerns whether a utopia can exist in the midst of a non-utopia? A brief review of utopian fiction shows that this has indeed often been assumed to be the case. As James (2006, p219) describes: "In the numerous versions of the classic utopia in the centuries succeeding Thomas More´s Utopia (1516), we have a traveller, perhaps with a small number of companions, who lands on a remote island or undiscovered continent; in more recent versions this is another planet, or the future". Furthermore, away from literature, the 'socialist utopia' mentioned above were seen by their adherents as co-existing with the

non-utopia in the west. However, in an era of globalisation, is such a utopia tenable? Even if the focus of a utopian vision is upon transport planning in a particular city, it appears to be contrary to the spirit of utopia in such a world to assume that other cities are non-utopian.

Issues concerning the transport content of utopia are described below in Section 4. However, more generally, it can be pointed out that, due to the 'subjective' nature of desirability, the content of utopias is liable to vary between individuals and groups with different political and cultural attitudes. In fact they can be potentially conflicting for a single individual. For example Harvey, after describing the vision of 2020 "Edilia", that came to him in a "restless dream", relates how:

> "I awoke in a cold sweat. Had I had a dream or a nightmare? I prized my eyes open and peered out of the window. I was still in the Baltimore of 1998. But I was unsure whether to be reassured or distressed by the fact. The dream stayed with me for much of the day. The general picture I was left with was down-to-earth, commonsensical and in some ways very attractive. But there were many elements that left me anxious and nervous the more I thought about them." (Harvey, 2000, p279).

As described by Levitas (2010), utopia can have many different functions. One function that is particularly relevant in the current context concerns the identification of 'antinomies' (mutually contradictory aspects of desirable futures). Jameson (2005), in Archaeologies of the Future, describes antinomies in utopian thinking particularly in the context of science fiction literature, with a chapter from the book on this subject (Jameson, 2006) being included in Imagining the Future (Milner et al, 2006), a collection of twenty one papers marking the book's publication. The antinomies described include labour, production/consumption, complexity/simplicity and subjectivity. With regards to the last he writes:

> "This brings us to the fundamental Utopian dispute about subjectivity, namely whether the Utopia in question proposes the kind of radical transformation of subjectivity presupposed by most revolutions, a mutation in human nature and the emergence of whole new beings; or whether the impulse to Utopia is not already grounded in human nature, its persistence readily explained by deeper needs and desires which the present has merely repressed and distorted. This is a tension that is not merely inescapable; its resolution in either direction would be fatal for the existence of Utopia itself." (Jameson, 2006, p36)

When thinking utopia, it is frequently helpful also to think of dystopia, which is defined as the opposite of a utopia, i.e. a highly undesirable world. Furthermore, in the current context it is useful to consider the concept of dystopia avoidance, defined as being an image of a world in which steps have been taken to avoid a dystopia. It is frequently the case that dystopia avoidance is associated with some type of potential future environmental catastrophe (and resulting social consequences), such as global warming or the end of energy availability. In general, dystopia avoidance can either take the form of mitigation, adaptation or a mixture of these. Mitigation typically involves drastic policy steps being implemented to avoid the catastrophe occurring, whilst adaptation assumes that the catastrophe will occur, but imagines a society that is 'making the best of a bad situation'.

An important question concerns how a utopia 'deals' with the problems of potential environmental catastrophe. By definition, a dystopia cannot be included in a utopia, or else it would undermine the desirability of the latter. It follows that any utopia must include within it an element of dystopia avoidance if there is the possibility or likelihood of a catastrophe occurring in the future. In fact, in the case of the threat of global warming, it would be bizarre

to imagine a currently-imagined utopia that did not avoid such a threat. But what other elements exist in the utopia, separate to dystopian avoidance, that gives them the character of a 'utopia'? In the context of the late 20th century, Baeten describes how:

> "[T]he bankruptcy of the socialist utopia, together with an overall shattered belief in social progress, has enabled free-market advocates to promote capitalism as a sort of revanchist utopianism….. The current hegemonic free-market utopia is revanchist in that it seeks to re-install a mythical economic freedom of the past when the state, Socialists and Social-Democrats would not be able to substantially amend, curb or distort the powers of the free-market. It considers social-democracy and socialism as mere temporary obstructions in the great march towards a truly free-market" (Baeten, 2002: p147)

Thus the answer to the previous question appears to be that socialist utopias emphasise social progress whilst free-market utopias emphasise economic freedom. However, what is the role of environmental catastrophe in these alternative utopian views? Whilst socialist utopias avoid environmental catastrophes through social means, free-market utopias need to put a huge emphasis on technology 'solving the problem'. However, given this heavy dependency upon future technology, the utopia is put in a weakened state and is vulnerable to other factors that might undermine it, such as geo-political threats. Recent research by Macdonald (2012) would seem to indicate that free-market utopia are in decline for precisely this reason. Comparing scenarios created before 2001 with those created after, he states "the period of triumphant globalization and a free-wheeling wealth creating free market" (p288) has given way since 2001 to "a period of greater uncertainty: the period of the war on terror against an unknown enemy" (p288), resulting in "catastrophe stories becoming more common" (p281).

The overall picture is one of both socialist and free market utopia in decline, being replaced by various types of visions of dystopia avoidance.

4. Transport aspects of utopia

This section addresses the issue of the content of utopias in terms of their transport systems, thus enabling the construction of 'transport utopia'. In doing so, it notes that the visioning/backcasting exercises mentioned in Section 2 either do not mention utopia or else make the explicit point that they are not constructing utopia. In short, utopian thinking has not yet entered transport studies.Perhaps more surprisingly, utopian thinking has played only a very small part in the new mobilities paradigm (Hannam et al, 2006, Cresswell, 2010), and when it does so, e.g. in "Movement as utopia" (Couton and López, 2011), it does not deal with urban mobility. Thus there is no identifiable body of literature on urban transport/mobility utopias to draw on. However, given that much urban planning literature on utopia mentions transport, this provides an alternative entry point to previous thinking on the subject. Before examining this literature it is worthwhile defining exactly what is meant by a transport system. In the present context it is defined as being made up of three elements: (1) the mobility of people and goods; (2) the physical aspects (including transport infrastructure, the built environment, vehicles and technology) that facilitate or inhibit such mobility; (3) the system of governance with respect to formulating and implementing transport policy.

4.1 Transport in past urban utopias

With respect to urban planning, Pinder (2002, p216) describes how the years around the turn of the twentieth century "were especially significant for the development of visions of cities in Europe and North America. Out of the maelstrom of urban change emerged numerous

streams of utopianism that influenced urban planning". Of particular significance were the three theorists of urbanism, Howard, Wright, and le Corbusier, who

> "attempted to define the ideal form of any industrial society. ....They offer us not a single blueprint for the future, but three sets of choices - the great metropolis, moderate decentralization, or extreme decentralization - each with its corresponding political and social implications....[T]he three ideal cities represent a vocabulary of basic forms which can be used to define the whole range of choices available to the planner." (Fishman, 1982, p7).

Whilst various authors mention the transport characteristics of these idealised cities (such as Lillebye, 1996, Marshall, 2001, Hall, 2002, Pinder, 2005, Frampton, 2007), these characteristics inevitably reflect the era when they were created when transport circumstances were very different to today, for example levels of car ownership were much lower. To provide consistency with the present-day construction of utopian images, it is useful to 'update' the transport characteristics of the "vocabulary of basic forms" of the three authors and relate them to currently existing forms in the early 21st Century. Furthermore, it is useful to create a set of transport-related archetypes which can be termed Corbusian, Wrightian and Howardian. Thus the Corbusian archetype is broadly compatible with various types of currently-existing large dense city, criss-crossed by car-oriented city expressways and mass public transport systems (typically underground in wealthier countries). The Wrightian archetype is compatible with low density 'de-urbanised' settlements (both large and small) relying almost exclusively upon car transport. Various implementations of a (watered down version of) a Howardian archetype currently exist: a 're-utopianised' version would probably

be extremely similar to the description of transport given in the GSG utopia New Sustainability Paradigm[5]:

> "Private automobiles are compact and pollution free. They are used in niche situations where walking, biking and public transport options are not available. Larger vehicles are leased for special occasions and touring. Advanced mass transportation systems link communities to local hubs, and those hubs to one another and to large cities." (Raskin et al, 2002: p45)

However, an immediate comment can be made that these (transport) images relate almost exclusively to the physical aspects of transport infrastructure and the built environment more generally, i.e. the second of the aspects of the transport system listed above. Whilst transport policy-making is not specifically mentioned in the images created by le Corbusier and Howard, such policy-making is one aspect of more general approaches to governance considered by the two authors. Pinder distinguishes the authoritarian approach of the former with the anti-authoritarian approach of the latter,"drawn from anarchist perspectives and especially from the work of Kropotkin" (2005, p54). Arguably, the Corbusian approach to transport policy-making is dominant today, given the current technocratic practices which emphasise the role of the 'transport expert' in formulating plans, particularly as 'forecaster' and 'evaluator': advocates of participatory planning, though in a minority, can be seen to be following (to a certain extent) the alternative approach. With respect to mobility, Pinder (2005) points out that the images of le Corbusier and Howard are primarily concerned with efficient circulation. Pinder makes a contrast with the image of New Babylon created between the late 1950s and the early 1970s by Constant, a one-time member of the Situationist

[5] The description of transport given by Raskin et al (2002) refers generally to the *Great Transitions* scenarios, of which there are two versions: the rural-based *Eco-communalism* and the more urban-based *New Sustainability Paradigm*. Given the reference in the description to "large cities" it is considered that it is more relevant to the *New Sustainability Paradigm* than to *Eco-communalism.*

International, which "celebrates nomadic lines of flight, errant paths, resistance to the disciplining mechanisms of state power that aim to fix and channel flows" (p206). Parallels are clear here with questioning of the traditionally-dominant derived demand paradigm in transport studies, whereby "travel is not pursued for its own sake but only as a means of accessing desired activities in other locations" (Mokhtarian et al, 2001, p355), and much of the literature in the new mobilities paradigm (referenced above). A key issue of relevance in the current context concerns the difference in desirability between 'fast' and 'slow' mobility. More will be said about this in section 4.2. In summary, it can be claimed that a future utopia should involve a 'utopianisation' of all three elements of the transport system, as distinct from many previous utopias which only utopianise one or two elements.

4.2 Antinomies of transport

In the present day, opportunities for mobility of different types depend upon social hierarchies, with various groups being 'socially excluded' due to a lack of sufficient access to transport facilities (Lucas and Currie, 2012). Cresswell (2010) describes how distinctions in mobility opportunities/behaviour do not reduce simply to 'fast' mobility for one group and 'slow' mobility for another group: in differing circumstances either fast or slow travel might be the prerogative of an elite. Presumably a socially-oriented utopia, through removing social hierarchies, would involve a transport system which would provide equal opportunities for all to travel. Various questions immediately arise though. Firstly, it is not clear whether such a transport system would be fundamentally fast, fundamentally slow or some type of hybrid. In the first two cases, would the utopia not be accused of being authoritarian in denying either 'fastness' or 'slowness' to those that desire such types of movement? In the case of a hybrid system (combining both fast and slow) would it be physically feasible without one speed being seen as 'dominant'? If one speed were dominant, would it be necessary to ration

opportunities for travel by the ‘other speed’ and how could such rationing be done without incurring inequality and/or bureaucracy?

In any case, would it be feasible on environmental grounds to have fast transport systems throughout the world? Whilst it is clear that this is not the case using current carbon-based technology, there are many advocates of technological solutions to such problems, particularly concerning the future use of hydrogen. Such solutions are critically discussed by Hultman (2009), whilst McDowall and Eames (2006) point out that the literature on the future of hydrogen is “contested”, with “debate and uncertainty” about a variety of technological aspects. In such a context, it appears unwise to rely too heavily in a ‘technological fix’ to a variety of problems such as lack of energy, global warming and local air pollution. On the other hand, technology still needs to be taken into account when describing future transport utopias.

Finally, how do all these questions relate to Jameson´s comments above about subjectivity. Would there be, with respect to mobility, a “mutation in human nature and the emergence of whole new beings utopian” or would there be revealed “deeper needs and desires which the present has merely repressed and distorted?” In the former case, what is the basis for speculating about the new beings? In the latter case, it might at first be assumed that deeper needs and desires of people involve more mobility, given that mobility is generally increasing: in particular it might be assumed that residents in poorer parts of the world might aspire to the mobility characteristics of those in wealthier parts. But, on the other hand, how much mobility in the latter is currently ‘coerced’, so that the deeper need is for less movement?

5. Analysis of scenario sets

This section applies the theoretical ideas/constructs described in earlier sections in order to comment on two alternative 'practical' scenario-building exercises which have a strong 'transport element', as shown in Table 2: Intelligent Infrastructure Futures (IIF) from the Foresight Programme of the UK Office of Science and Technology (Curry et al, 2006); and Megacities on the Move from the Forum for the Future (Gazibara et al, 2010). All the scenarios shown in Table 2 are made up of an image of a particular year in the future, and are accompanied by storylines describing how the future is reached. We have classified the individual scenarios in these scenario sets in terms of images of utopia, images of dystopia, and images of dystopia avoidance, based upon an interpretation of the general tone as to how they are described by their authors. It is immediately clear though from Table 2 that the three utopias have highly differing 'utopian characteristics': in particular, only Urban Colonies has a degree of social equality and thus can be considered as a 'social utopia'.

Table 2: Summaries of two sets of scenarios

Name of study	**Images of utopia**	**Images of dystopia**	**Images of dystopia avoidance**
Intelligent Infrastructure Futures (IIF) (to 2055)	Perpetual Motion ("'Always on' culture... constraints overcome by technology and innovation.. The big picture is of a very busy city with lots of private car traffic, all running on clean	*Tribal Trading ("*A world that has been through a sharp and savage energy shock. The world has now [in 2055] stabilised, but only	*Good Intentions ("[A]* world in which the need to reduce carbon emissions constrains personal mobility. A tough national surveillance system

	forms of energy… strong polarisation within the UK, and also between richer countries, which can afford the investment implied within the scenario, and poorer ones.") Urban colonies ("A high-density (but not necessarily high-rise) green city with a lot of locally produced goods... cycling and walking are an integral part of everyday life, and hydrogen-powered public transport systems are widely used by all... economic development can occur within a social environment that is both inclusive and sustainable")	after a global recession that has left millions unemployed. Long-distance travel is a luxury that few can afford: for most people, the world has shrunk to their own community. Cities have declined: local food production and services have increased.... Local conflicts recur over resources: lawlessness and mistrust are high*").*	ensures that people only travel if they have sufficient carbon quotas... The broader discourse in this scenario is about the limits of individual choice and freedom, a world–view that is deeply unfamiliar to late 20th-century consumer thinking.*").*
Megacities on the Move (to 2040)	Communi-*city ("*The world has turned to alternative energy, and transport is	Sprawlville ("The city is dominated by fossil fuel-powered	Planned-opolis ("In a world of fossil fuels and expensive energy,

	highly personalised with a huge variety of transport modes competing for road space... Power has devolved to individuals and communities; cities have become more informal and sometimes chaotic centres of creativity... ... Central coordination is weak... Multilateralism has disintegrated, because Global agreements and governance grew increasingly complex, expensive and unworkable... Inequality within and between societies is on the rise... , Religious and cultural norms have become more entrenched in many places.... Much of urban design has shifted to a collaborative model with local participatory budgets.	cars. The elite still gets around, but most urban dwellers face poor transport infrastructure... The city is a great fragmented sprawl. There are huge, low-density suburbs, freeways to connect them, and commuter jams. In the periphery of the city there are numerous 'failed' developments... Nation-states are becoming more authoritarian in the face of fuel and food shocks, spawning a number of violent changes of government")	the only solution is tightly planned and controlled urban transport.... Cities are often run by specialist, city-governing companies. These companies bid for very lucrative long-term contracts and may run dozens of major cities worldwide.") Renewabad ("The world has turned to alternative energy, and high-tech, clean, well-planned transport helps everyone get around... Governments impose stricter rules, and use increasingly sophisticated technology for monitoring and

	Where this works, everything is very tailored to the desires of the participants, for example with car-free family areas, or Segway lanes for the elderly.")		enforcement. They often mandate where you live within the city, how you travel, and how much energy you use.")

The three utopias

Perpetual motion is a utopia of speed and one which is in line with the free-market utopias mentioned in Section 3, given its high level of globalisation, low levels of equality and high levels of car use. The image is consistent with the Corbusian archetype (Section 4) and its description leaves the impression that (hyper-)mobility is valorised for its own sake. Although the associated storyline mentions some resistance to the 'always on' culture, it seems that there are not many ways of avoiding it. In fact, the 'individualism' typically associated with the 'freedom of car travel' is seen to be a relatively superficial aspect of a society that essentially lacks diversity. In comparison, the transport element of Urban Colonies seems similar to the GSG vision of a New Sustainability Paradigm (Raskin et al, 2002) and as such fits with a Howardian archetype. The physical transport system provides opportunities for various different modes, including walking, cycling and (hydrogen-powered) public transport. However, as in the Howardian archetype, the scenario description conveys a sense that mobility is restricted to efficient circulation and that there is little diversity in attitudes to mobility (as opposed to diversity in the physical transport system). On

the other hand, such diversity seems to exist in Communi-city which appears to stress creativity both in terms of mobility and the vehicles used to facilitate such mobility. However, the 'price' of such diversity appears to be a high degree of inequality. In terms of governance, both Perpetual Motion and Urban Colonies appear to have a 'business-as-usual' approach, reflecting current practice in the UK. On the other hand, Communi-city involves a highly decentralised form of governance which, to a certain extent, is attractive. However, there appears to be the underlying assumption that such decentralisation is incompatible with cooperation between different parts of the world. Such an assumption can be seen as the 'mirror image' of 'strong government control', as discussed below for the images of dystopian avoidance: the implicit conclusion being that organisation can only occur if 'someone takes charge'.

The two dystopian images

As described in Table 2, Sprawlville is indeed a dystopia and fulfils well the function of a 'situation to be avoided'. Tribal Trading though is more complex. As described, it is indeed highly unpleasant. However, it is a close relation with a de-urbanised Wrightian archetype in which there is much less reliance on car travel and as a result there is a need for small communities whose inhabitants live close to one another. There are various versions of this archetype which are vastly more attractive than Tribal Trading, such as the rural-oriented GSG utopia of Eco-communalism (Raskin et al, 2002). Such versions take car-dependence out of the Wrightian archetype and introduce social equality, arguably creating a new archetype. Utopias of this sort are generally slow in pace and are consistent with the description of transport in Harvey´s utopia Erdilia: "[l]ocomotion may be slow and restricted but it is... free and safe" (Harvey, 2000, p270). One of the criticisms of such utopia is that they can be 'over-sedentary', forcing a restricted life-style and effectively being little more

than a fantasy of mediaeval life 'with some technology thrown in'. Although this could certainly be one version of a rural utopia, it is not difficult to imagine other versions in which mobility is not restricted and there is a high degree of (slow) nomadic movement between locations for those that desire it.

The three images of dystopian avoidance

The three images of dystopian avoidance belong very much to the same archetype: in order for environmental catastrophe to be avoided, there is a need for strong government leadership and control. In the three scenarios given in Table 2, government intervention is highly intrusive and authoritarian. In the case of Planned-opolis, this intervention is carried out by the private sector, for example in 2025 "City Corp takes over the management of Laos after a governance failure". In science fiction, descriptions of the latter type of scenario form a key feature of cyberpunk narratives in which "cyberspace and urban space are both dominated by corporations" who dominate "private spaces saturated with technologies of surveillance and information" (Collie, 2011). Support for visions of a dystopian avoidance vision comes from various authors, though many do not dwell upon the potential intrusiveness of the state and/or private corporations concerning the lives of individuals. An exception here is Urry (2008) who, in describing the IIF scenarios, argues that the future is "poised between two possible alternatives" (p275), Tribal Trading and Good Intentions. He describes the former as "global warlordism" and the latter as a "digital panopticon", claiming that "[t]he future of human life seems to depend upon moving across a tipping point towards a system based upon the extensive and intensive 'digitization' of each self. Such a system of tracking and tracing involves step changes in the character of life" (p274). In general, all the images mentioned here can usefully be compared with the image of an ecologically-friendly anarchist utopia

described by Ursula Le Guin (1974) in "The Dispossessed" where there are no government imposed restrictions on mobility.

6. Conclusions

Whilst dystopian images are by definition unpleasant, it might be expected that utopian and dystopian avoidance images would be attractive. However, in the case of the two scenario sets described in Section 5, the utopian images are weak in terms of their social content and the images of dystopian avoidance involve unattractive levels of government control. These example scenario sets typify a more general phenomenon, namely a dearth of social utopian images of transport in the type of 'practical' exploratory scenario sets that are currently used for a range of strategic planning activities, particularly those associated with reducing climate change. On the other hand, whilst there is a large amount of interest shown in the academic transport literature in creating images of environmentally sustainable futures (typically through backcasting exercises), these images frequently reduce to numerical targets such as reductions in CO_2 emissions or energy usage, along with the levels of vehicular traffic consistent with such targets. Even when images of the future are more filled-out in terms of mobility characteristics, they generally do not highlight the type of 'antinomies of transport' described above. Rather, they tend to assume implicitly that whole populations give up unsustainable lifestyles and conform in a homogenous way to the behaviour required to attain environmental sustainability. It is thus argued that there is a current need to encourage thinking about socially-oriented utopias in urban transport planning. Specifically, there is need to think about transport futures that embody equality and diversity whilst maintaining environmental sustainability. When considering the transport content of such futures it is useful to consider separately the three elements of the transport system described above (whilst recognising that they are interlinked): the mobility of people and goods; physical

aspects that facilitate or inhibit such mobility; and the system of governance with respect to formulating and implementing transport policy. In particular, a future utopia should involve a 'utopianisation' of each aspect, as distinct from many previous utopias which only utopianise one or two elements. There will of course be problems in doing so, due to apparent tensions between equality and diversity, between potentially opposing desires for fast and slow life-styles (and their accompanying infrastructures), and between conflicts between hopes for technological solutions and doubts that these might be realised. However, the core argument is that the construction of utopias can help to find solutions to some, if not all, of these problems (whilst recognising that such solutions are unlikely to be successful 'overnight'. This brings us to the final conclusion concerning a question that has lurked underneath much that has been written above: how precisely might utopian thinking help transport planning? If the latter is seen as a technocratic exercise in which experts devise means for achieving government-specified targets, it is unlikely that utopian thinking will help very much at all. However, if transport planning is considered to be an activity in which groups and individuals see themselves as having the potential for influencing the future, irrespective of whether they have 'top-down authorisation' to do so, then utopian thinking is likely to be highly potent.

Acknowledgements

We would like to acknowledge the support of the UK Engineering and Physical Sciences Research Council's Sustainable Urban Environment programme, through the STEP-CHANGE project [grant EP/I00212X/2]. We would also like to thank three anonymous referees for their constructive criticisms and suggestions, which helped us in revising our original version of the paper.

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