Knowing their place on the roads: what would equality mean for walking and cycling?

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Abstract
Trials and dangers faced by pedestrians and cyclists have not only created an impression of undesirable conditions, but have promoted arguments of injustice and inequality. High rates of death and injury coupled with reporting of poor infrastructure and fear of the behaviour of other road users point to a plausible prima facie concern that pedestrians and cyclists suffer inequalities. Yet this appearance masks uncertainty about what factors are relevant in judging inequality and how these should be treated against potentially competing claims. This article develops a framework assessing conditions for walking and cycling according to a theoretical conception of political and social equality, and so providing a basis on which to make arguments for change in transport policy, planning and law. In developing the framework we examine the relevance to equality of a range of factors, including measurement of road casualties, questions of responsibility to increase walking and cycling as means of contributing to pollution and carbon reduction, matters of fault and responsibility for road safety, and the economic impacts of improving conditions for walking and cycling.

Keywords: Philosophy; equality; walking; cycling; risk; access

1. Introduction

The number of cyclists and pedestrians injured or killed in road accidents remains high despite some recent reductions (e.g. Roberts et al., 2002; WHO, 2009). Lives lost or harmed is cause for concern, and there are questions of whether pedestrians and cyclists face disproportionate risks, particularly as compared to drivers and passengers of motor vehicles. Coupled with this, a range of studies have argued that broad conditions faced by pedestrians and cyclists should be understood as forms of inequality, inequity, or lack of social justice. These claims relate to fear of crime, and problems of severance and inaccessibility, particularly to services, employment and education (Whitelegg, 1997; Acheson, 1998; Bostock, 2001; SEU, 2003). In this article we defend the argument that equality and social

justice should be used to assess conditions for pedestrians and cyclists. However we suggest that it can be difficult to move from identification of inequity or inequality faced by pedestrians and cyclists to an understanding of how these problems can justifiably be addressed. Consideration of the relevance and policy implications of apparent inequalities tends to be complicated by social and environmental benefits of walking and cycling, coupled with arguments about the legitimacy or viability of measures which could improve conditions for these modes. To mediate competing claims, and to make a defensible case for measures to tackle inequalities facing pedestrians and cyclists, we argue for a philosophical conception of political and social equality which can be applied to policy, planning and law affecting walking and cycling.

This article was motivated by a three year project on *Understanding Walking and Cycling* which explored attitudes to, and experiences of, walking and cycling in four English cities. Its results suggested concerns that pedestrians and cyclists might face inequalities and certainly perceived that they did so (Pooley et al., 2011), but raised questions about how this could be adequately judged. To illustrate some of the complexity involved in judging the relevance of apparent inequalities, consider how alongside the mortality, injury, fears and risks associated with walking and cycling there are a range of individual and social benefits. There are prospects of benefits to health through exercise (e.g. Hartog, 2010; Rojas-Rueda, et. al. 2011; de Panis, 2011; Kahlmeier et al., 2011) and from improved local air quality if transport pollution is reduced (COMEAP, 2010), to the economy in congested areas (Eddington 2006), and to carbon reduction (IEA, 2012; DECC, 2013). So, people might be encouraged to walk or cycle for self-interest reasons, especially for health benefits (e.g. de Hartog, 2010), or as acts of social responsibility (Blondel et al., 2011; Higgins, 2005). Yet even if the benefits mitigate risks and harms, there are questions about the reasonableness or plausibility of expecting uptake of walking and cycling if conditions are poor. Attempts at promotion are often coupled with attempts to improve conditions for walkers and cyclists (e.g. Pucher and Buehler, 2008; Hickman and Pharoah, 2011; Pooley et al., 2011), but questions remain about the sufficiency of improvements and the basis on which assessments of sufficiency should be made. These questions become more acute when measures to improve the lot of pedestrians and cyclists meet competing claims or concerns, for instance, that various restrictions on driving constitute an unjustified or politically problematic interference with individual choice (for instance, Hårsman and Quigley, 2010; Docherty and Shaw, 2011; Khayesi and Amekudzi, 2011).

Recent years have seen developments in the use of political philosophy as a means of analysing questions in transport planning and policy (e.g. Wolff, 2002; Mullen, 2004; 2012; Beyazit, 2011; Martens, 2011; 2012; van Wee, 2011; 2012). However this work is still at relatively early stages and has tended to consider broad transport issues with consequent limitations to depth of debate and leaving significant questions about the application of political philosophy to specific areas. A function of this article is to extend and deepen this debate by considering the application of one philosophical approach, to one aspect of transport. So the scope is framed on one side by our limiting our investigation to walking and cycling as travel modes, and given their prominence, using motor vehicles as a comparison. While the framework we develop might be extended to other transport, we do not explicitly consider this extension. On the other side we have framed the philosophical questions as the application of a conception of equality. The overarching reason for this focus is that it responds to existing concerns that pedestrians and cyclists face certain inequalities, inequities or lack of social justice. Our contention is that a philosophical conception can provide a

transparent framework capable of analysing and assessing the frequently competing concerns and claims surrounding policy and planning as it impacts on pedestrians and cyclists.

In the next section we outline a broad conception of equality, describing its context in political philosophy and briefly exploring its application to transport policy, planning and law. The subsequent sections investigate how this conception might be applied to walking and cycling by developing an analytic framework. The framework serves two purposes, first providing criteria for judging whether apparent inequalities faced by pedestrians and cyclists should be considered relevant policy concerns. Second, it provides a basis for judging how interests or claims of pedestrians and cyclists should be treated in the face of potentially competing concerns, such as interests of other road users, or questions of the economic impact of changes to support walking and cycling. In Section 3 we start to develop the framework, taking as a starting point the question of whether pedestrians and cyclists face disproportionate risks and levels of harm from road traffic collisions. We suggest our general account of transport and equality acts as a guide to using road casualty data in assessing relative levels of risks faced by transport mode. Moreover the account also indicates the multiple questions of equality left unanswered by examining casualty data alone. In Section 4 we begin to tackle these questions, considering how equality frames assessment of where responsibility for safety or pedestrians and cyclists should be placed. We argue that wider impacts of transport on carbon emissions, on other pollutants and on the economy, can be relevant to this question by indicating that there may be a collective responsibility to encourage walking and cycling and therefore to reduce the physical risks faced by pedestrians and cyclists. Finally in Section 5 we draw together the strands of the argument to develop a framework for judging the application of equal concern to walking and cycling.

2. Transport and equality

2.1 Theory of equality

Political philosophy has a tradition of argument about the definition and justification of equality as a notion underlying political, social and economic organisation. This stems at least from Aristotle (Politics Book 3, XII) and is illustrated by articles asking 'Equality of What?' (Sen, 1979; and for instance, Cohen, 1990; Daniels, 1990; Arneson, 2010), 'What is Equality' (Dworkin, 1981), "What is the point of equality?' (Anderson, 1999). Debate on equality is ongoing, and any conception will be subject to criticism by non-egalitarians and by egalitarians defending a differing conception. So we aim to defend a theoretical account broad enough to be plausible to a range of opinion, while recognising the scope for debate. Thus we intend our argument to open up, rather than seek to settle discussion of equality and its application to walking and cycling.

We start from the notion that each person has equal moral value, and therefore that governance and policy should be designed to show equal concern for each person (e.g. Harris, 1988, 1997; Dworkin, 2000; Mullen, 2009; cf. Cohen, 1989; Sen, 1993). In the rest of this section, and in Figure 1, we outline broad characteristics or high level principles of equal concern. Adoption of equal concern implies development of political, social and economic organisation which recognises that people are entitled to access means of protecting and sustaining their lives (Glover, 1977; Harris, 1988, 1997). Moreover, since there is more to life than simply remaining alive, equal concern requires entitlement to some access to means of conducting the activities and projects that matter to people (Sen 1979, 1993; Cohen, 1989; Dworkin, 2000; Mullen, 2004). Questions of what it would mean to apply these two aspects of equal concern are influenced by a number of broad criteria. To begin, equal concern

requires that people will be 'treated as equals' rather than 'treated equally' meaning that provision should take account of people's differing needs (Dworkin, 1977, p. 68). Dworkin makes the case for this criterion of equality through the following example:

> 'If I have two children, and one is dying from a disease that is making the other uncomfortable, I do not show equal concern if I flip a coin to decide which should get the remaining dose of a drug. This example shows that the right to treatment as an equal is fundamental, and the right to equal treatment, derivative.' (Dworkin, 1977, p. 68)

Equal concern can be distinguished from theories, such as libertarianism, which maintain that people have a right to be free from direct harm and force, but that there is not an entitlement to be provided with means of sustaining life (see Nozick, 1974, pp. 30-4 and ch. 4).[1] Likewise, it goes beyond the idea that people should not be excluded from accessing means of conducting activities (e.g. by discriminatory laws), and implies distributive policies which provide each with some means of conducting activities and projects (see Figure 1, box [A]). Moreover this account of equal concern can be distinguished from ideas of equality that inform welfare economics, and which have been prominent in many policy sectors, including transport. A significant distinction between these accounts lies in the emphasis on showing equal concern in distribution, and in showing concern for each person despite loss of overall benefits.[2]

There is debate on what level of provision and safety individuals are entitled to, and what responsibilities they have to provide for themselves and others (e.g. Arneson, 2010; Anderson, 1999; Cohen, 1990; Daniels, 1990; Dworkin, 2000; Roemer, 1993). We limit our account to some broad points. First, equal concern implies that one individual's entitlements may be limited by the equal entitlements of others (Figure 1, box [B]). Second, it is plausible to maintain that where they are capable, individuals have responsibility to contribute to providing for others (e.g. Dworkin, 2000; Harris, 2005; Mullen, 2009). One justification is that since people matter, we have some collective responsibility, through acts or omissions, to support their fundamental interests (Glover, 1977, pp. 96-97; Harris 2005;). Second, arguably this responsibility is shared, since if it falls on only a few people, then those few would be likely to face a burden substantial enough to mean that they no longer have the provision or safety that they are entitled to (Mullen, 2009). Third, where they are capable, individuals have some responsibility to provide for themselves since to fail to take such individual responsibility would impose an unfair burden on others (see Dworkin, 2000, ch. 2) (Figure 1, box [C]).

2.2 Equal concern and its application to transport

What might these requirements of equality mean for transport? One approach is to begin by noting some broad features of transport which are relevant to equal concern. First consider

[1] In this respect, equal concern might appear to place quite onerous demands on society. Yet this is a misleading impression. The entitlements provided by equal concern are limited by the need to show equal concern to others, whereas in libertarianism there is an absolute right to be free of direct harm caused by others. Respecting this right can be extremely difficult if not unfeasible since many activities, such as polluting travel, impose direct harms on others (Railton, 1985).

[2] The relationship and contrasts between conceptions of equality underlying welfare economics and other egalitarian approaches is subject of longstanding and on-going debate (see e.g. Cohen, 1990; Harris, 1988; 1997; Mullen 2004). It would not be feasible to engage in this debate within the scope of this paper.

the idea that concern should be shown for protecting each person's life (see Figure 1, box [A]). We might begin to think about the application of this idea by looking at the transport related risks to which people are subject, and which they impose on others by using transport. As we discuss in following sections these risks include road traffic collisions, poor air quality, noise pollution and carbon emissions from transport, and potentially opportunity costs such as including land use and active lifestyles (see also Mullen, 2004, 2012). The distribution of risks is a relevant factor although, as we shall see, determining how it is relevant is not straightforward. Absence of transport might also present risks since transport is among the means needed for access to basic needs of food, shelter, healthcare and security, for enabling countless social, economic, political and creative activities, and travel or the use of transport, can be an end in itself (e.g. Beyazit, 2011; Lucas, 2006; Mullen, 2004, 2012; Martens, 2011, 2012; Martins et al., 2012; van Wee, 2011, 2012).[3] We benefit from a transport system carrying basic supplies, allowing fast access to emergency services, and more broadly supporting an economy which in turn provides goods, services and opportunities. Yet both collective and individual benefits associated with transport can be unevenly distributed. For instance, economic benefits are not equally distributed (Hills et al., 2010; OECD, 2010), and differences in needs and preferences about where and how to travel can mean that the existing transport system offers better choices to some people than others (cf. Whitelegg, 1997).

In aiming to treat each person's life as (equally) valuable, it could be tempting to suggest seeking elimination of deaths from collisions and transport related pollution. The danger is that measures required to do this might involve restrictions creating a new set of deaths associated with a lack of available transport needed for accessing goods and services (one example might be restrictions which impact on accessibility to healthcare services, see for instance Acheson, 1998, part 2.5; Bostock, 2001). So in the near term it may only be possible to limit transport related deaths.[4] Yet focusing on minimising death may not be sufficient unless we also consider whether some defined groups of people (e.g. in particular geographical locations or age groups) will be more exposed than others to risks of death. The argument is that if it is known and accepted that some groups will face higher risks, then those people can claim they are not being treated as equals. Therefore, it has been argued that showing equal concern involves a further condition that we also attempt to reduce inequalities in the levels of physical risk to which different people are subject (Harris, 1988; Mullen, 2004, 2009).

Since travel can be a crucial factor in enabling activities that make life worth living, equal concern will involve protecting access to transport (Mullen 2004, 2012, and see Beyazit 2011; Martens 2011, 2012). The criterion of access to transport need not involve any specification of what transport modes should be accessible. A significant factor in thinking about what transport should be accessible is just the requirement that each person should have access to some travel. This could result in restrictions on certain transport modes if they amount to a barrier preventing others from accessing means of travel. Further accessibility

[3] We might try to list the diverse values that people gain from short and long distance travel, and the ways in which different people gain pleasure, knowledge, or meaning from walking or cycling or train journeys and so on. However such a list would be partial and contestable and vary markedly from person to person (cf. Glover, 1977, Ch. 2 part 7).

[4] Over time it may be feasible to prevent all deaths from collisions without upsetting transport's function in supporting basic means of living. The ambition to prevent all deaths from road traffic collisions was adopted by Sweden's Vision Zero policy which 'has a long-term strategy in which road safety is improved gradually until, over time, the vision is achieved' (Peden et. al. 2004 p, 20).

places limits on methods for reducing transport related harm since our account of equality does not suggest that safety can take priority over some ability to conduct activities that make life worthwhile (Figure 1, box [A]). Neither does our account suggest that activities take priority over safety. In other words, there is a need to consider both priorities together.

So, our account of equality applied to transport involves two non-hierarchical priorities: that deaths associated with transport should be minimised, subject to the condition of avoiding inequalities in life-threatening risk, and that people should have access to some means of travel (Figure 1, boxes [D] and [E]) (Mullen 2004). Realising these priorities may, of course, involve behaviour change and restricting choice on transport use, however such restrictions might be justified by the high-level principles of equal concern (Figure 1, boxes [B] and [C]). These principles also provide a basis for maintaining that there is a collective responsibility to attempt to achieve these priorities (Figure 1, boxes [A], [B] and [C]). The question then, is what are the implications of these principles and priorities for policy, planning and law affecting conditions for pedestrians and cyclists?

[Insert Figure 1: Principle of equal concern and its application to transport policy, planning and law]

3. Judging inequalities in risk

In this section we start by examining the application of the principle of equal concern to walking and cycling. Our starting point is consideration of how we might judge conditions according to the priority of minimising transport related deaths and inequalities in risks (i.e. Figure 1, box [D]). This section focuses on relative levels of road collisions by mode and health benefits of active travel. We argue that these risks and benefits are fundamental to equal concern, however they are not the whole story and considering them in isolation leaves questions unanswered. In the following sections we explore how these questions involve assessment of other factors, including indirect health impacts of transport, individual responsibilities, and an account of what sort of access to transport and travel people are entitled to expect.

Let us begin by looking at the role, and limitations, of road casualty data in assessing relative levels of risks faced by users of different modes, and the relevance of these risks for our conception of equality. As an example we use transport statistics from Great Britain. First let us look at the number of accidents for distance travelled (cf. Pucher and Buehler (2010) who use this measure to compare levels of safety). For Great Britain in 2012, there were 38 pedal cycle fatalities per billion vehicle miles, and 38 pedestrian fatalities per billion miles walked compared to 3 car occupant fatalities per billion vehicle miles and an average for all modes by road of 6 fatalities per billion vehicle miles (DfT and ONS, 2013, Table RAS41001).[5] While deaths per billion miles for pedestrians, cyclists, and car occupants have tended to decrease from 2006-12, there remains a substantial discrepancy between fatality rates for pedestrians and cyclists compared to the average for all road modes and in particular as compared to car occupants.[6] [7]

[5] This is the reported accidents figures given for car occupants and light goods vehicles. These figures have been combined to allow comparison with the National Travel Survey statistics on journeys by mode.

[6] Although for pedestrians, car occupants and cyclists, the rates have not gone down every year when compared to the previous, for instance, for pedestrians the rate went from 37 in 2010 to 41 in 2011, for car occupants, the rate went from 3 to 4 over the same period, and for cyclists the rate went from 35 to 37 between 2009 and 2010. (DfT and ONS 2012, Table RAS41001).

There are several reasons for caution in using this type of data to assess whether risks are relatively disproportionate according to equal concern. First there are questions about what is being measured by the data sources cited. There is debate on the extent to which the British police road accident reporting system (STATS19) reflects actual numbers of pedestrian and cyclist injuries given underreporting (see Ward et al., 2006; Cavill et al., 2010, 2:3-2:4). A further caveat in using these data is that since they are aggregated figures from Great Britain they will mask a range of different local and individual circumstances affecting exposure to risk, and will limit the extent to which the measures can be claimed to reflect risks to which each cyclist or pedestrian is exposed.

Second there are potential objections to measuring walkers and cyclists' relative risk and safety as a function of distance travelled. These objections may be further divided into questions of whether distance is the most appropriate measure, questions about whether any measure should take account of other factors, such as health benefits associated with transport, or individual responsibility. The first two are dealt with in this section, and the third in the next section.

With respect to questions of whether distance is an appropriate measure for judging inequalities in exposure to risk, we might first consider whether instead we should compare rates of death and serious injury for time spent travelling (e.g. Wardlaw, 2002). Yet this appears a problematic measure since it would measure risk as varying in proportion (inter alia) to the speed of travel, and this relation would occur independently of whether people are exposed to new risks associated with travelling at higher speed. If priority for safety measures is influenced by the level of risk that a group is judged to face then, on this measure, priority would be influenced by the speed (again, independently of whether, or how, speed itself is a causal factor in risk). This seems an arbitrary method of assessing priority.

A different approach would be to consider levels of risk for number of journeys undertaken by mode. In Great Britain in 2012, 22% of journeys were made on foot, compared to 64% of journeys made either as driver or passenger of a car or van (DfT, 2013, Table NTS0301). Pedestrians accounted for 420 of the 1,754 people killed on the roads in 2012, and car and van drivers and passengers combined accounted for 834 fatalities (DfT and ONS, 2013, Table RAS 40006). On this measure, we can compare the risk of a fatality suffered by pedestrians (measured as 420/22 =19.1) to that faced by car and van occupants (834/64 = 13).[8] On this measure the inequality appears less disproportionate than a measure of risk for distance travelled, although there is still a substantial difference. For cyclists, the picture also slightly improved on this measure compared to one using distance travelled, since cyclists make up 2% of journeys (DfT, 2013, Table NTS0301) and 118 fatalities (DfT and ONS, 2013, Table RAS 40006) so having a rate of 118/2 = 59. However fatality rates for cycling remain disproportionately high even when this measure of number of journeys is used.

A measure of number of journeys may appear at odds with the requirements of equality since it does not differentiate between journeys of different length. Therefore it may not differentiate between a journey constituting a small part of life (e.g. a routine trip to the shops) and one making up a more substantial aspect of life (e.g. a journey across the country). So it risks being insufficiently sensitive to cumulative risks faced by some people in the course of making multiple short journeys. But if this objection is levelled at judging equality

[7] The casualty rate for motorcyclists per billion miles is also much higher than for all modes combined, this may also raise equality concerns. However consideration of this is beyond the scope of this paper

[8] Dividing numbers of deaths by percentage of journeys/mode allows comparison of risk between modes however it does not show an absolute value for this measure of risk. An absolute value would need to include the actual number of journeys by mode, and this figure is not available.

according to level of risk by number of journeys, would there not be a similar objection to the idea of measuring risk by distance? On the measure of risk for distance travelled, distance is being treated as a proxy for measurement of 'getting on with life,' or of the 'extent to which the person is able to conduct activities which matter to them.' There are potential problems with this proxy use of distance: for instance, it seems to privilege safety for people fortunate enough to live near to family, friends and work. The question then is whether we can tolerate the objections associated with using either distance or number of trips as a proxy, or whether neither will do? There is some reason for preferring a measure using distance, as to use the number of journeys would imply an assumption that longer journeys in motor vehicles tended to be (or at least were frequently) equivalent in 'value' to people's lives to the shorter journeys made by people on foot. Consequently we might look to rates of death for distance travelled as an indicator for judging inequalities in risk, with the caveat that rates of death for number of journeys will also provide some insight into levels of inequality.

As they are forms of active travel, frequently promoted for their health benefits (Pucher and Buehler, 2010; de Hartog, 2010; Panis, 2011) it could be claimed that walkers and cyclists are already (at least partially) compensated for facing high rates of injury in collisions. At first sight this appears plausible since equal concern can be held to contribute to sustaining life (cf. Glover, 1977, pp. 96-97). However there are doubts that equal concern should involve offsetting risk in this way. First, some people have fewer options than others about how they travel, and travel by motorised or public transport can be limited by cost and availability (SEU, 2003; Bostock, 2001). Second while health benefits of exercise can be achieved through active travel, they can also be gained through non-travel related exercise (including walking and cycling solely for leisure, e.g. the practice of carrying a bicycle by car to reach 'safe' tracks for leisure cycling). So while people with greater choice about their mode of travel can gain health benefits of exercise without suffering risks associated with walking or cycling as transport, this ability is not available to those relying on walking or cycling for travel. This difference can create inequality in people's ability to gain health benefits while remaining relatively safe from collisions.

4. Responsibility for safety of pedestrians and cyclists

The section above indicates how we can begin to use equal concern to judge levels of physical risk and access to health benefit. Broadly, the argument so far suggests equal concern for each person would be served by seeking to mitigate inequalities in risks faced by users of different transport modes. Matters of mode choice and questions of fault have featured little in this argument. Yet perhaps they should have. In other words, should measures of inequality discount harms occurring to people held to be at fault or in some way responsible for their injury? The concept of equal concern suggests people have some responsibility for protecting their own safety and interests, but the question is how much? This question might be understood in two ways. First, if walking and cycling are relatively dangerous it might be suggested that - where a choice is possible - they should be discouraged, and those who persist in exercising this choice should accept the associated risks. Second, if we accept that people are entitled to walk or cycle, we may consider how the application of equal concern would frame fault in an accident resulting in harm or death.

4.1 Is there a responsibility to walk or cycle?

Consider the argument that those who choose a dangerous activity – such as walking or cycling – should accept responsibility if they are injured as a result. Objections to such an argument may take the form that it lacks compassion, or that it is likely to lead to a risk-averse society, or that it encourages a culture which expects people in a vulnerable position to retreat from, rather than question or challenge, threats. We do not here consider the merits of such objections. Instead we focus on a further objection that imposing responsibility in this way could result in wider injustice, including that created by failure to minimise deaths associated with transport. Assessing risks of this wider injustice requires consideration of the impacts transport can have on factors including carbon emissions, other pollutants and the economy.

Road transport is a major cause of carbon emissions – it accounts for over 16% of energy related global CO_2 emissions from fuel combustion in 2010 (IEA, 2012, p. 69). In the UK the proportion is higher with around 20% of CO_2 emissions coming from road transport in 2010 and 21% in 2011 (DECC, 2013, Table 4). The Intergovernmental Panel on Climate Change (IPCC) predict future problems internationally including coastal flooding, low crop yields, water shortages and more severe heat waves (IPCC, 2007, pp.11-12).

Further '[r]oad transport contributes to significant emissions of NO_2 (30%) and PM_{10} (18%)…and is responsible for up to 70% of air pollution in urban areas' (HCEAC, 2010, p.5). While emphasising the uncertainty in the calculations, the Committee on the Medical Effects of Air Pollutants report that in the UK air pollution has:

> 'an effect on mortality in 2008 equivalent to nearly 29,000 deaths in the UK at typical ages and an associated loss of total population life of 340,000 life-years. The burden can also be represented as a loss of life expectancy from birth of approximately six months.' (COMEAP, 2010, pp. 1-2)

The mortality associated with poor air quality and probable impacts of climate change implies that (equal) concern for people's lives requires moves to less-polluting transport, including walking and cycling (Blondel et al., 2011; Higgins, 2005). Yet should responsibility for increasing use of less polluting modes rest primarily with individuals, or should it be a collective responsibility to alter conditions to promote those modes? The account of equal concern incorporates some individual responsibility for others' safety, but limits this responsibility to prevent it becoming so onerous as to deny a person their own entitlement to safety. Where walkers and cyclists face relatively high risks, placing responsibility on individuals to take up walking or cycling involves asking them to accept an increased physical risk. Although the additional probability of being seriously injured or killed is small, the potential consequences are obviously severe (cf. Berdica, 2002, pp. 118-9). This consideration points to a collective responsibility to create conditions which mean that it would be justifiable to expect people to walk or cycle.

This argument faces a potential objection in the form of claims that to create conditions to support walking and cycling will result in other impacts which will ultimately result in harm or loss of life. One candidate of this type would be concern about detrimental economic impacts. Given the complexity involved, it is far beyond the scope of this paper to consider potential economic impacts of significant support for measures on cycling.[9] However we can

[9] There is significant uncertainty about the relationship between transport and economy, although transport models might predict economic dis-benefits if measures increase journey time or impose costs on certain travel modes (see for instance, Banister, 2008 and 2012; Martin, 2006, Marsden et al. 2013; Quddus et al., 2007). This

frame the way in which economic impacts (or indeed other impacts) would be assessed by a conception of equal concern. The questions relevant for this assessment are not solely concerned with identifying and quantifying economic impacts. Instead they extend to a second set of questions which ask whether there are reasons to hold that these impacts would be severe enough to result in injuries, harms, and inequalities, comparable to those prevented by the application of equal concern.

4.2 Reasonable conditions, behaviour and fault

While we can claim there is a case for walking and cycling, there remains the second question of what the application of equal concern implies for understanding of attribution of responsibility and fault. One approach to this question would be to follow the current standards implied by law and guidance in a given jurisdiction (see Fedtke, 2003). However this begs the question of whether current standards should be used to judge whether individuals are held responsible for their own injuries or deaths. Recall that we are suggesting that people are entitled to access to travel, and that there should be an aim of avoiding inequalities in risks of physical harm that people face. So assessing 'fault' for the present purpose involves an idea of how someone exercising their entitlement to travel might reasonably be expected to behave in order to mitigate risks. Carsten et al., (1989) in a study of contributory factors in road accidents developed an idea of the 'reasonable road user' against which they compared the behaviours of their sample of accident participants. In this case the reasonable road user was felt to be of a standard greater than the average road user, though the study did not differentiate between different types of road users nor their capabilities. Arguably any test of reasonable behaviour would have to take account of the capacity of the traveller, so for instance we might have a less stringent requirement for children who make flawed judgements of vehicle speed (Howarth and Gunn, 1982).[10] Further judgment of whether injury to one's self should be discounted in measures of equality, involves assessment of whether the injured person's actions which causally contributed to the accident were a response to conditions (e.g. poor infrastructure), creating an obstacle to access to travel. This assessment requires an account of what equal concern implies for entitlement to access to given modes of travel, and entitlement to given conditions for travel.

How could we assess whether the injury resulted, at least in part, from an attempt to overcome obstacles to effective travel by foot or bicycle? Relevant factors may include determination of whether networks (i.e. door-to-door routes[11]) for pedestrians or cyclists are broken (e.g. by major roads without adequate crossings, or by parked vehicles obstructing the footway). In such cases an attempt to overcome the obstacle might mitigate attribution of fault to the pedestrian or cyclist for an injury they suffer in consequence. This suggestion requires some clarification. First we can note that it sets a rather low standard for 'effective' travel by foot or bicycle, only suggesting that a barrier to effective travel occurs where the traveller is exposed to significant risk in overcoming the barrier.[12] However, the point at

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is complicated by economic costs of aspects such as injury, illness, inaccessibility to services and opportunities, climate associated with transport, climate change.

[10] We cannot avoid this objection to discounting by any appeal to the idea that a carer should take responsibility, since any failure on the carer's part would not justify societal lack of concern for the welfare of whoever they are caring for.

[11] That is the whole public road network (excluding those roads where pedestrians and cyclists are not permitted) and all other public rights of way.

[12] This leaves open the possibility of arguing that barriers to effective travel can be caused by factors that do not necessarily impose risk of physical harm, but which might, for instance, add significantly to journey length. Within this article there is not space to explore this further possibility.

issue here should not be conflated with questions of liability or justification for causing injury or risk to others. If the action, albeit intended to avoid an obstacle to travel, created greater risk or injury to others, then it might violate others' entitlement to equal safety and as such would not be defensible.

Further, to claim that fault should not be attributed, or that it should be mitigated, requires that the actions were reasonable. Applying this criterion could involve frequent disagreement about whether conditions amount to an obstacle, and so whether someone's action to avoid it is reasonable. For instance, the CIHT point to cases of pedestrians choosing to cross a road with no crossing rather than use what is held to be an intimidating underpass (CIHT, 2010, para. 9.1.10). Similarly shared foot- and cycle-ways may be considered to improve safety for cyclists relative to the risks of cycling on the carriageway. However, evidence suggests obstructions, and the need to cross junctions joining the carriageway, present significant risks to people using these cycle-ways (Reid and Adams, 2010, p. 20). In individual cases, the scope for dispute may centre on whether specific conditions increase or mitigate risk, and hence whether walkers or cyclists act reasonably or can be held to be at fault, in failing to use infrastructure provided. Given the potential disagreement we might consider where the burden of proof should lie in determining reasonableness, or whether the uncertainty means we should give up any attempt to assess fault in these cases. If we adopt the latter approach then no further consideration would be needed (cf. Harris, 1995). On the former approach we should note that since we are discussing civil not criminal responsibility we would not require proof beyond reasonable doubt. Nevertheless there are other reasons to suggest that a high burden of proof would be required in relation to any idea that society has limited responsibility to attempt to reduce risks to people held to be responsible for those risks. These reasons stem from the argument that one of society's most important obligations is to protect people's lives. So we require a high standard of proof if we are to suggest limiting that concern for life.

5. A framework for judging the application of equal concern to walking and cycling

In this section we review the discussion in previous sections in order to develop a framework to guide policy affecting walking and cycling so that they are consistent with an overarching aim of showing equal concern (Figure 2). We began from the argument that equal concern rests on the normative assumption that each person matters, and given this we can make a case that we have collective responsibility to provide conditions which protect people's lives and health, and which enable people to access social, economic, political and personal opportunities and activities. In Section 2, we argued that applying equal concern to transport involves two non-hierarchical priorities of concern both to reduce absolute levels and inequalities in physical risks and harm, and to ensure that each person has access to some means of transport which enables them to get on with their lives. A framing factor for each priority is the requirement that provision for one person should not undermine the ability to provide for others. The multiple impacts and uses of transport mean that in their application, these two priorities must have a broad scope. So in thinking about the priority of access to some form of transport, we should examine whether that which is available, is adequate for enabling participation by each member of society. However this involves moving beyond consideration of accessibility for individuals' in isolation and requires that we examine whether provision which is suitable for some can result in barriers in accessibility for others.

[Insert **Figure 2: Application of equal concern to walking and cycling]**

Sections 3 and 4 sought to flesh out how to apply to walking and cycling, the priorities of equal concern to reduce absolute levels and inequalities in physical risks and harm, and to ensure that each has access to some means of transport. One of the most significant points to emerge from these Sections is the extent to which the two priorities interact, each influencing the application of the other. The reason is again due to the complexity of transport's impacts and uses. Recognising this interaction is central to assessing conditions and guiding policy affecting walking and cycling. First, this interaction plays a key role in defining the conditions relevant to designing policy approaches affecting walking and cycling. One condition combines aspects of each priority to make the normative assertion that each person is entitled to access some form of transport, and that this access should come at the cost of exposure to high levels of risk (Figure 2, box [H]). This does not mean that people are entitled to access any transport mode, or that use of all transport modes should be protected by policy, however considered alone, the condition offers little indication of what transport modes should be available, and the contexts in which they may justifiably be used. So the claim that people have some entitlement to travel as they need this to get on with their lives, does not alone enable us to indicate what travel, or what travel purposes, are reasonable. We can only begin to interpret this claim when it is considered in conjunction with the idea that policy based on equal concern should consider all transport related deaths. As we argued in Section 4, there is a case for saying there is societal responsibility to support walking and cycling, and under certain conditions an individual responsibility to walk or cycle, on the basis that greater use of these modes may result in fewer deaths associated with transport (Figure 2, box [I]). By taking account of these conditions we can start to identify principles to underpin policy. These conditions support the idea that walking and cycling are (at least among) those modes which people should be entitled to use as means of accessing opportunities and activities (Figure 2, box [J]). Given this, pedestrians and cyclists should be able to expect conditions in which they are not exposed to disproportionately high risks (Figure 2, box [K]). In interpreting this principle we can recall that equal concern implies both individual and collective responsibilities, so as we discussed in Section 4.2, cyclists and pedestrians would not avoid some responsibility for safety. However a policy approach which does not aim to remove inequalities in risk would not be defensible.

These conditions and principles can be used to assess existing conditions for pedestrians and cyclists according to the idea of showing equal concern. So we have criteria by which to judge whether, or the extent to which, pedestrians and cyclists face relevant inequalities in relation to exposure to physical harms (Figure 2, [M]). We also have an indication of how to judge whether conditions for walking and cycling amount to a barrier to accessibility which is unjustifiable on the basis of equal concern (Figure 2, [N]). The question, if irrelevant inequalities are identified, is how they should be addressed. It would be far beyond the scope of this paper to identify measures which might be effective in reducing inequalities in different contexts. However we can identify relevant policy areas and use the the argument developed through this paper to guide policy development, particularly by providing a basis for dealing with policy problems and challenges.

Policy approaches in transport planning, law and enforcement appear central to mitigating inequalities in safety and accessibility. Our previous discussion has emphasised how barriers to walking and cycling can involve infrastructure problems as well as behaviour such as pavement parking and inappropriate driving speed. There would be substantial implications

of a policy approach which sought to mitigate these problems so that (door to door) networks can be travelled on foot or bicycle without disproportionate risk (Figure 2, [N], [O], [P]). This might involve restrictions for motor vehicles, through measures such as pricing or outright limitations on road use or speed. This could be expected to meet with charges either that it violates car occupants' entitlement to accessibility, or if pricing is used, that it is unfair due to inequalities in wealth. This charge relating to accessibility could be justified, but only if it made driving impossible, and then only under certain circumstances, for instance where occupants are unable to walk or cycle, or where distances make walking or cycling unfeasible. Similarly, equal concern could support claims that pricing measures are unfair, but only if preventing motor travel for people with no other ability to (safely) access opportunities and activities. The application of equal concern could have the effect of constraining planning likely to increase distances travelled, such as planning for services or retail developments located away from residential areas. One reason would be that increasing travel distances would tend to be at odds with the societal responsibility to support accessibility by walking or cycling. Further, planning anticipated to increase volumes of motor traffic would be complicated by the priority of ensuring that networks are walkable and cycleable. Finally, as we outlined in Section 5, the further expected objection to planning based on equal concern would be that it would result in damage to economic growth. We have suggested that, if equal concern underpins policy, this objection needs to meet a high standard in which there is, at least, reason to maintain that the economic harm resulting from the measures would result in greater relevant inequalities than existed previously (Figure 2, [Q]).

6. Conclusions

We have argued that there is a case for treating walking and cycling as a subject relevant to consideration of what it is for society to show equal concern for its members. We might question whether framing walking and cycling as a particular concern for a just society will be effective in making the case for measures to improve conditions. Even if the argument for this framing is accepted we might expect multiple obstacles to its application. We have noted arguments that societies have become organised on the basis of high use of private motor transport which in addition to its impact on land use, shapes social and economic arrangements (cf. Whitelegg, 1997; Urry, 2004). Therefore if measures which could support walking and cycling would also restrict the ways in which motor vehicles are used, then this might be held to present (at least short term) problems in some people's everyday lives. Perhaps relatedly, it is apparent that there is political and cultural support for preserving or enhancing conditions for motor vehicle use (see for instance, Williams, 2010; CLG, 2011; Schwanen et al. 2012). Further we would not underestimate how the application of equal concern could present challenges for planning, especially if measures required by equal concern are believed to have some detrimental economic impacts. Nevertheless the framing defended in this paper might enable walking and cycling to be understood not only as potential means of gaining certain benefits, but as a part of a more fundamental moral concern. Despite difficulties of application, this could assist in strengthening arguments for walking and cycling in ongoing debate on law, policy and planning.

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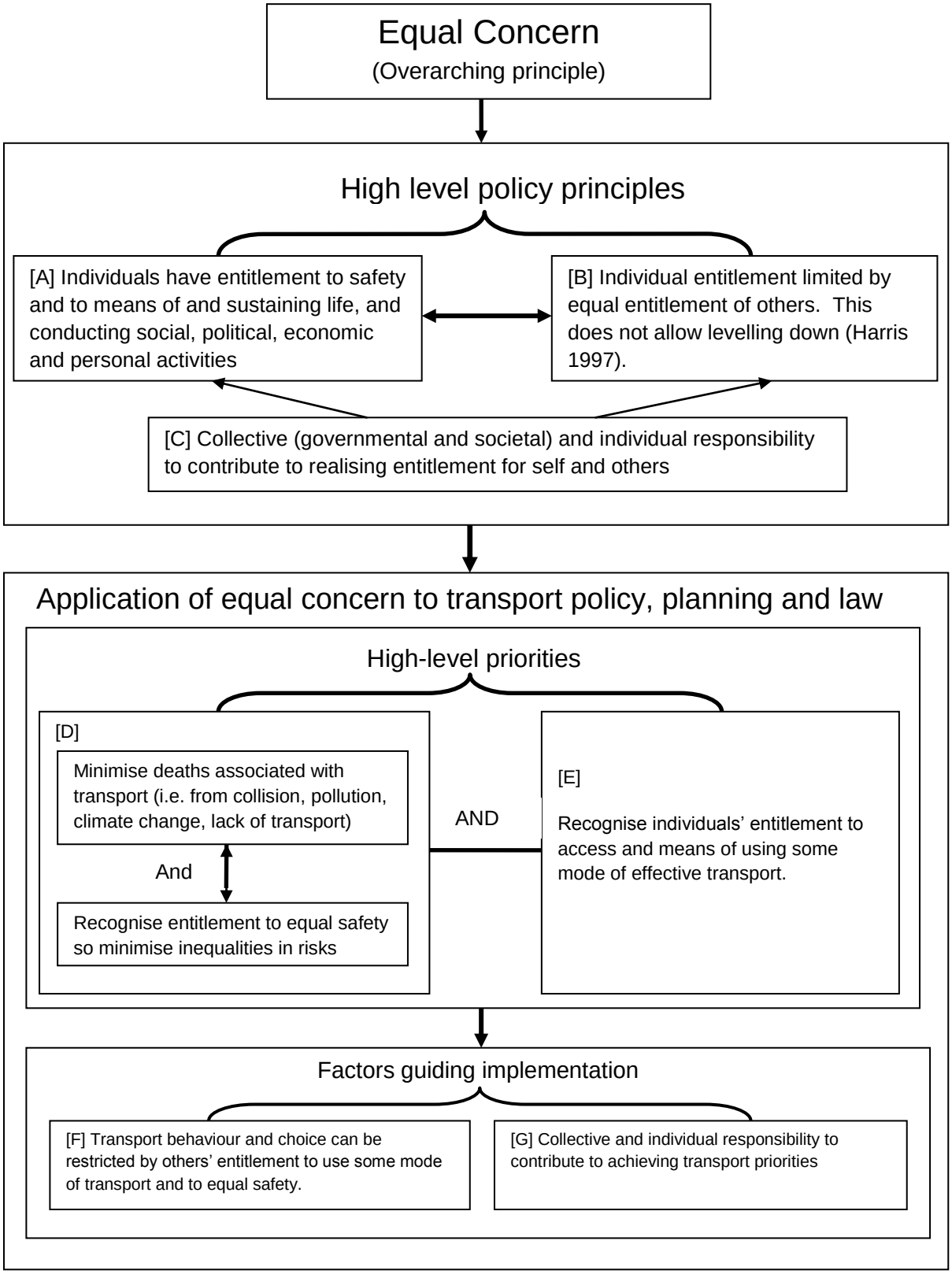

Figure 1: Principle of equal concern and its application to transport policy, planning and law

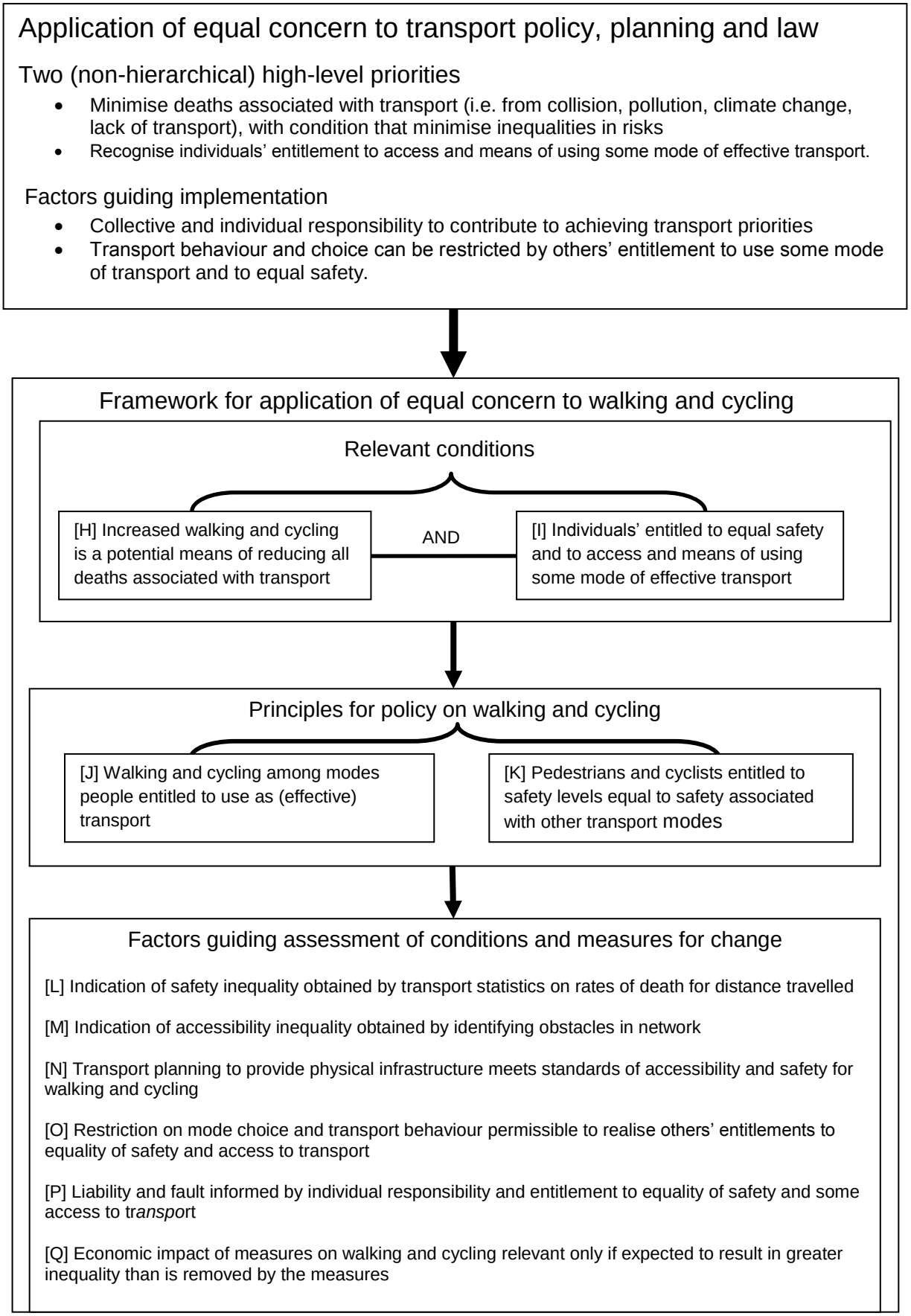

Figure 2: Application of equal concern to walking and cycling