



Are citizens not accurately informed about long-term societal costs of unsustainable travel or do they not care?



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ABSTRACT

We argue that people think more about the short-term individual benefits of personal motorized travel than the long-term societal costs. One explanation is that people are more concerned about their own wellbeing and the wellbeing of their close relatives than the well-being of unknown others. Another explanation is that people have less knowledge of the long-term societal costs than of the short-term individual benefits. Research findings documenting long-term societal costs may increase this knowledge if accurately conveyed by governments, mass media, producers and providers of travel services, and opinion leaders. We identify several obstacles to such an accurate dissemination of research findings that need to be removed.

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Introduction

Sustainability of the environment is at the top of policy and research agendas throughout the world. A search of the Internet reveals that the term “sustainable” is related to (among others) food, clothes, offices, agriculture, and architecture. It does not come as a surprise then that also travel, which is a significant part of people’s daily consumption, is also viewed from a sustainability perspective. A transportation journal (*International Journal of Sustainable Transportation*) is dedicated to the topic. The relationship between travel and sustainability is also discussed in many papers published in the regular transportation literature.

In this paper our focus is on measures minimizing personal travel by cars to abate its negative sustainability effects. However, exclusively focusing on this denies the fact that transport policies should not only be valued for their environmental outcomes but also for their social and economic outcomes, and that these outcomes occur at different temporal and spatial scales. Yet, we conjecture that, both among citizens and politicians, thinking about the benefits dominate the costs, and that this is an obstacle to changes to sustainable travel.

Despite that the negative sustainability effects are well documented by research, it appears difficult to change personal

car travel towards more sustainable practices. We will argue in this paper that this is partly due to the way in which people trade-off individual vs. societal, immediate vs. deferred, and local vs. global benefits and costs. We will discuss the role dissemination of research findings in the society may have for these trade-offs in counteracting choices of more sustainable travel.

The paper is organized as follows. In the next section we discuss the different sustainability effects of travel. Then a section follows in which we briefly review explanations of why people in general think about short-term individual benefits instead of long-term societal costs. In the final section we discuss how research findings documenting long-term societal costs of travel are disseminated through governments, mass media, producers and providers of travel services, and opinion leaders.

Sustainability of travel

Over the past decades many definitions of sustainability have been proposed (e.g., Amekudzi et al., 2009; Miller et al., 2013), including a wide variety of indicators. Without attempting to review these definitions in any detail, it is noted (see Van Wee, 2014) that two approaches exist in defining sustainability. The first approach emphasizes the intergenerational aspect and states that the current generation should not exploit resources in such a way that the needs of future generations are jeopardised. A second approach stresses that social, environmental, and economic outcomes should be balanced in a sustainable transportation system. Social implications typically refer to the options offered by the

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transportation system for participating in activities such as work, education, social interaction, and leisure fulfilling the requirements of a preferred lifestyle (Delbosc and Currie, 2011) but also to the experience of travel itself (Ettema et al., 2010) and health outcomes related to exposure to pollutants, noise, and lack of physical activity (Handy, 2014). Environmental implications of travel are also diverse including aspects such as health effects of exposure to pollutants and noise, pollution of soil and water, deterioration of landscapes and habitats, and emission of greenhouse gases (see Van Wee, 2014; Hensher and Button, 2003). Economic aspects of transportation systems mainly concern their role in the functioning of firms, labour markets, and production processes, but may also involve the costs caused by negative environmental or social effects (e.g. noise reduction measures or investments to reduce congestion).

Taking into account social, environmental and economic outcomes implies that any transportation system includes both costs and benefits making trade-offs necessary. For instance, if restrictions on personal travel by cars are imposed by higher fuel prices in order to reduce negative environmental effects, this may have negative impacts on people's participation in activities. In a similar vein, it may lead to price increases of production processes with negative economic impacts. Thus, a transportation system that is sustainable in both an environmental, social, and economic sense requires a balanced set of policies. Finding the "right" set of policies is further complicated by the fact that positive and negative effects of travel may occur at different temporal and spatial scales and in different social contexts. With respect to social context, it is typically the case that benefits accrue at the individual level while costs are incurred to society as a whole or on specific groups. For instance, urban highways allow individuals to travel to their destination quickly and conveniently, but emissions they produce contribute to polluting the atmosphere in a larger area, affecting many people. In addition, it has been found that those benefiting most from car travel (and thus contributing the most to pollution) and those suffering most from pollution are typically different groups, consisting of different social strata. Similar mismatches between those causing negative effects and those experiencing them are observed at a global scale due to greenhouse gas (GHG) emissions. Residents of islands in the Pacific that are threatened by rising sea levels are typically not those producing disproportional amounts of carbon dioxide.

Regarding spatial scale, the most fundamental distinction is between the local and global levels. While benefits experienced by individuals take place at the local level (e.g., experiencing a quicker journey or being able to reach a specific holiday destination), effects may occur at wider geographic scales. For instance, acidification and air pollution, stemming from local sources, may extend to the scale of city regions. The most extreme scale difference is observed in the context of GHG emissions, where local, individual benefits contribute to global changes in atmospheric concentrations and global sea level rise as well as regional climate changes throughout the world. With benefits and costs arising at different spatial scales those experiencing them will be different groups, raising equity issues.

Finally, benefits and (environmental) costs typically manifest themselves at different time scales. While social benefits are experienced instantly, knowledge and awareness of environmental costs may lag behind several decades or more. During most of the era of mass motorization, people have not been aware of the effects it has on climate change. In most cases, a certain level of accumulation of pollutants or GHG emissions is required before tangible effects (diseases, climate change) can be observed and measured. This lagged effect, combined with the fact that those causing the costs are not necessarily those bearing them, results in that travellers are only to a limited extent confronted with the

consequences of their behavior. In addition, it raises issues of accountability. For instance, to what extent are motorists and transportation planners of the 60s and 70s accountable for current climate change problems if the issue was not well known at that time, and is it fair to impose restrictions on societies who are still in an earlier phase of motorisation now that the effects are known?

Causes of people's thinking about consequences of travel

Behavioral research offers several possible explanations of why people think less about the costs of travel for the society (and therefore indirectly for any individual including themselves belonging to the society as well as future generations) than they think about the benefits for themselves. An explanation, seemingly popular among the general public, is that people care less about societal costs because they are in general more concerned about their own well-being and the well-being of their close relatives than they are concerned about the well-being of unknown others. A second explanation is that people have less knowledge of societal consequences than of individual consequence. First, the societal consequences are more difficult to know about because they depend on the actions by many people, whereas the individual consequences are directly felt because they largely depend on individuals' own actions. Second, the societal consequences are more difficult to know about because many of them are deferred compared to the individual consequences that are more often immediate. Third, in contrast to the individual consequences, the societal consequences are more difficult to know about because many are global and not local such that they are directly encountered.

In the following we briefly discuss the two key explanations in relation to individual versus societal consequences, immediate versus deferred consequences, and local versus global consequences.

Individual vs. societal consequences

In order to investigate factors that affect thinking of societal consequences compared to individual consequences, different research paradigms have been developed (Gärling et al., 2002). In the *Prisoners Dilemma Game* (PDG) (Pruitt and Kimmel, 1977), two persons face a choice of cooperation or competition. If both either cooperate or compete, they will receive the same consequence. If one competes and the other cooperates, the former will receive a better consequence than the latter. The consequence is always better for the individual who chooses to compete. The dilemma is that if both do what is best for them individually (compete), the consequence for both will be worse than if both cooperate. In order to choose cooperation such that they both receive the joint best consequence, both need to be concerned about the consequence for the other and trust the other to cooperate.

A drawback with the PDG as a research paradigm for analyzing the salience of individual versus societal consequences is that it involves only two persons. It may therefore only apply to dyadic relationships (and to relationships between two groups, see Bornstein, 2008), but not to the relationships between individuals and the society. An extension of the PDG (the *N*-person PDG; see Komorita, 1976) has therefore been devised and used in research. Hardin (1968) referred to this extension as the "commons dilemma" that he argued is the root of current environmental problems, that is that many common resources such as material, energy, water, and air are free to overuse or pollute. Climate change, sustainability issues, and other so called "collective action" problems in societies have been modeled in this way (Ostrom, 1990). For this and related extensions, Dawes (1980) coined the

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