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Rethinking the links between social exclusion and transport disadvantage through the lens of social capital

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Abstract

This paper provides a critical review of the progress in understanding the linkages between transport disadvantage and social exclusion. It follows earlier work in proposing social capital as a concept that mediates those linkages but argues that transport researchers must not confine themselves to conceptualisations of social capital as predominantly benign and capable of reducing transport disadvantage and social exclusion. A range of hypothetical pathways is discussed, highlighting the Janus-faced character of social capital as a medium for both the effectuation of progressive social change and the perpetuation and creation of social inequalities. An analysis is provided of the extent to which the recent transport-related literature supports or rejects the hypothesised pathways, and key avenues for future research are identified.

Key words: social exclusion, transport disadvantage, social capital, literature review, social network

1| Introduction

There is a long tradition in transport studies, urban studies and human geography of research that examines the connections of mobility with social inequality and deprivation (Kain, 1968; Wachs and Kumagai, 1973; Hanson and Hanson, 1980; Kwan, 1999; Neutens et al., 2010), and a range of papers on those connections have recently been published in Transportation Research Part A (Stanley et al., 2011; Martens et al., 2012; Mullen et al., 2014). Within that tradition researchers have suggested direct causal links between transport and social exclusion (Church et al., 2000; Hine and Mitchell, 2001; Lucas et al., 2001; Kenyon et al., 2002; Lucas, 2004, 2012; Cass et al., 2005; Gray et al., 2006; Preston and Rajé, 2007; Stanley et al., 2011). Scholarship on these links flourished in the early 21st century, in part because of the interest the Labour government under Tony Blair took in reducing social exclusion in the UK. Yet, this flourishing also reflects more general concerns over the effects of neoliberal urban and transport policies on the less privileged segments of urban and rural populations in the UK and elsewhere.

The intimate connections of academic work on mobility and exclusion with the realms of policy-making and – less frequently – grassroots activism imply that research on transport and social exclusion ticks many of the 'impact' and 'knowledge valorisation' boxes that are increasingly important in research evaluations. However, the flipside of this orientation on policy and practice is that theoretical development has not always been the highest priority among researchers. Past studies have significantly expanded our understanding of concepts, such as mobility-related exclusion (Kenyon et al., 2002), access (Cass et al., 2005) or network capital (Urry, 2007, 2012), but research has to a considerable degree progressed through cumulative broadening of empirical research.

Therefore, the current paper draws upon various theoretical perspectives on social capital and explores how they can strengthen the theoretical basis of research about transport and social exclusion. Social capital has been one of the most widely used concepts in the social sciences since the 1990s (Woolcock, 2010), and it has been discussed in past research on the links between transport and social exclusion (Gray et al., 2006; Currie and Stanley, 2008; Stanley et al., 2011, 2012). However, the concept's full potential has not yet been realised in relation to thinking on transport and social exclusion. This is in part because previous research has gravitated too strongly towards understandings of social capital that are informed by the writings of James Coleman (1988, 1993) and particularly Robert Putnam (1993, 2000) who tend to privilege the benign impacts of social capital on individual and communal wellbeing over the more questionable effects. Research into the linkages between social exclusion and transport disadvantage would benefit from more fully appreciating the Janus-faced character of social capital: it helps us understand the dynamics in the interactions between mobility and social exclusion because it is both a medium for social change and can reinforce existing inequalities.

There are two additional reasons for focusing on social capital. Given its heterogeneous theoretical origins, it can bring multiple constituencies across the social sciences together and thereby enrich travel behaviour analysis. It also helps in transcending the realms of the social, the economic and the political – all of which mediate the relations between transport and social exclusion – and has much currency outside academia. Hence, social scientists' thinking on social capital can both aid in the ongoing theorisation of the social dimensions of travel behaviour in mainstream transport research and the current journal (Dugundji et al., 2011; Cairns et al., 2014; Di Ciommo et al., 2014), and add perspectives that are not normally

considered in transport academics' research about the role of transportation in social exclusion. This will help transport researchers and planners to better understand how transport disadvantage can be tackled through policies and other interventions.

The remainder of the paper comes in three parts. We proceed with a discussion of the key concepts of social exclusion, transport disadvantage and social capital in the following section, after which we explore their interrelations at a theoretical level. The paper concludes with a synthesising discussion.

2| Key concepts: social exclusion, transport and social capital

2.1| Social exclusion

The concept of social exclusion has diverse philosophical origins, which makes it polysemic and contested: it has different meanings for different people and in different situations (Daly and Silver, 2008). Yet, the emphasis of Anglo-Saxon liberalism on choice in social and economic interactions and distributional impacts has come to dominate academic and policy discourse. As a consequence, social exclusion tends to be understood as (ibid; Bhalla and Lapeyre, 1997; Hodgson and Turner, 2003; Cameron, 2005; Lucas, 2012):

- Lack of participation in social, economic and political life and broader than poverty;
- Multidimensional and cumulative: limited financial resources and security are often reciprocally tied to low education and skills, ill-health, little political power, etc.;
- Relative to other individuals or groups;
- Dynamic: it changes over time; and as

- Multi-scalar: it is experienced by, and directly affects, individuals and households as well as neighbourhoods and local communities.

Social exclusion is also a problematic concept. It homogenises because it works through dualism (Levitas, 1996): a person or group is either excluded or not, and gradients of inequality in economic resources, health and so forth among the excluded and particularly the included are easily side-lined. Another concern is that the opposite of social exclusion is often left under-defined (ibid; Cameron, 2006; Daly and Silver, 2008). As a result, those individuals and communities considered socially excluded are often marked as a redundant, pathological and immoral exception to a healthy, moral, responsible and competitive mainstream (Cameron, 2006: 401). This means that the concept of social exclusion is not only normatively charged but also vulnerable to co-optation by versions of neo-liberal discourse that posit participation in paid labour as the key pathway out of exclusion and that load the bulk of responsibility of becoming included onto the excluded (Levitas, 1996; Cameron, 2006).

Such understandings of social exclusion are compounded by the particular spatial imagination with which it is often associated (Cameron, 2006): social exclusion tends to be seen as a local phenomenon within a larger sea of normality, a state or process associated with particular sites – i.e. individuals, households or neighbourhoods – whose occurrence can easily be mapped onto, and understood with reference to, local causes that pertain to those individuals, households or neighbourhoods deemed excluded. This spatial imagination obscures the ways in which the production of social exclusion results from, or is enhanced by, wider societal transformations, such as contemporary forms of globalisation, the scaling back of the welfare state and the narrow focus on economic competitiveness of many state policies.

The problems Levitas, Cameron and others have outlined must be considered if transport academics are not to unintentionally exacerbate problems of social disadvantage. Still, social exclusion offers a useful way of thinking about inequalities when two conditions are met:

- it should not be considered as a (binary) state according to which one is excluded or included but as a dynamic process characterised by myriad gradations brought about by a wide range of local and non-local processes, and

- the emphasis should be on inequalities in multiple domains of everyday life that can reinforce each other instead of only or predominantly un/employment.

In this paper the term social exclusion refers to the lower levels in the evolving hierarchies of access to, participation in, and autonomy with regard to, economic life (including finances, employment and education), political life (including policymaking and governance), social life (including social ties and activities), cultural life (including public debate, arts and media) and health (both physical and mental). There are only (fluctuating) degrees of exclusion that individuals and groups experience; social exclusion is higher (increases) if, relative to others or earlier moments in time, individuals or groups enjoy (slide towards) lower levels of access, participation and autonomy in multiple domains.

2.2| Transport disadvantage

Thinking in this way about social exclusion also allows transport and mobility to be taken into consideration. Mobility can be understood in many different ways – as movement through many different types of space (e.g. physical, digital and social) and with reference to multiple time scales. Even if attention is restricted to the time scales of day, week or month, it

is possible to distinguish between the corporeal travel of people through physical space, the virtual travel enabled by the internet, the communicative travel through person-to-person messages via the (mobile) phone, letters and other technologies and the imaginative travel enacted by images of people and places in photos and the (mass) media (Urry, 2007). However, in this paper the focus is on embodied corporeal movement – travel behaviour – as this is already a heterogeneous and complex category and face-to-face contact has (so far) remained essential to social interaction (Urry, 2007). Besides, digital divides in many ways follow the same pattern as inequalities in activity participation and trip-making in the offline world (Ren et al., 2013).

Transport and mobilities scholars have examined how mobility and social exclusion interact. Kenyon et al. (2002: 210-211) defined mobility-related exclusion in terms of the processes that prevent people from participation in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks. Their definition falls prey to the process of homogenisation discussed earlier, but highlights three things. It draws attention to the centrality of accessibility – the (relative) ease with which a person can reach potential destinations (Neutens et al., 2010; Páez et al., 2012) – to social interaction and participation in society (see also the line of research by Farber et al. (2013; 2014) and Neutens et al. (2013) on social interaction potential). Second, it underlines that exclusion is in many ways a relative phenomenon. Finally, it bring out how exclusion can result from deviation from a norm of high mobility that is reflected in and reproduced through the lay-out and design of the built environment and transport infrastructures, the space-time organisation of social, economic and political life, and the collective rhythms of such everyday activities as shopping and recreation (see also Cass et al., 2005).

Church et al. (2000) deepen our understanding of the interdependence of corporeal mobility and social exclusion by identifying multiple ways in which the design and organisation of transport systems can enhance exclusion:

- The nature of transport systems can impose physical and/or psychological difficulties on potential users who refrain from using the system (physical exclusion).

- Peripheral residential locations and poor transport connections at the home end, as well as the absence of or distance to potential destinations can prevent people from travelling to destinations (geographical exclusion and exclusion from facilities).

- The monetary costs of travel can prevent people from travelling or restrict their search for potential destinations to areas close to their home (economic exclusion).

- Demands on people's time by care-giving, paid labour and other commitments can limit opportunities to travel and/or imply that people are only free to travel at times at which fewer transport services are available (time-based exclusion).

- Fear of crime and perceived insecurity can make people avoid certain sites (a particular neighbourhood, bus stops, etc.) and transport modes (fear-based exclusion).

- The design, surveillance and management strategies of public, semi-public and privatised spaces (train stations, shopping malls, gated communities, etc.) can discourage certain people – especially those at risk of prejudice and discrimination – from using certain mobility systems. These strategies can be found in particular in 'premium networked spaces' (Graham and Marvin, 2001) – the new or retrofitted ensembles of transport and telecommunication infrastructures and employment, shopping and leisure locations and services geared towards economic elites and affluent users (space exclusion).

The thinking of Kenyon, Cass, Church and colleagues highlights how a (relative) lack of resources (means of transport, money, time), opportunities or destinations to travel to, and

safe spaces to traverse en route are central to transport disadvantage. Yet, understanding of transport disadvantage can be extended by drawing on the concepts of motility (Kaufmann, 2002) and network capital (Urry, 2007, 2012). Motility encompasses access to the range of available movement options given spatial, temporal, economic and other constraints; the competence to recognise and use that access; and the appropriation through interpretation and action of particular options (Kaufmann, 2002). Network capital consists of elements that in combination produce a distinct form of social stratification in contemporary societies (Urry, 2007). Included among those elements are access to means of transport and mobility systems; movement capacities, such as the ability to walk or read a timetable; relatives, friends and others to travel to; and appropriate and safe meeting places en route and at destinations.

The concepts of motility and network capital confirm the importance of resources, destinations and safe spaces and highlight the role of skills or know-how; the motility concept also draws attention to cognitive understandings, aspirations, plans and needs, which shape appropriation. At the same time, both concepts focus on the (potential) mobility of the person(s) who may be more or less transport disadvantaged. However, it is also important to consider more 'indirect' forms of transport disadvantage, such as relative lack of power to affect transport policy-making and governance (see also Hodgson and Turner, 2003) and relatively high exposure to negative externalities of transport like traffic accidents, poor air quality or excessive noise. Martin (2007), among others, has noted how disadvantaged individuals and communities are often penalised twice: not only are they at greater risk of being excluded from fast, efficient and smooth mobility, they also are more likely to live in unhealthier locations with inferior transport connections and less traffic safety.

We therefore propose to understand transport disadvantage as a relational and dynamic outcome of a lack of access to basic resources, activities and opportunities for interactions, of a lack of cognitive knowledge, know-how, aspirations and/or autonomy regarding travel and its externalities, and of a lack of influence on decision-making in the context of transport policy and governance. Transport disadvantage can be both absolute and relative, and it occurs at both individual and collective levels.

2.3| Social capital

Like social exclusion, social capital is a polysemic and contested concept (Daly and Silver, 2008; Woolcock, 2010). Nonetheless, most definitions of social capital converge around "the manner in which networks and their emergent properties (e.g. trust and norms) can constitute a resource for their members" (Crossley, 2008, page 478, emphasis added). One way to understand how social capital as an object of study has been understood and examined is to make two distinctions, one of which pertains to geographical scale – the micro-level of the individual, household and local community on the one hand, and the macro-level of the region and (nation) state on the other (Woolcock, 1998) – and the other to analysts' overall project or purpose (Figure 1). Here a further distinction can be drawn between a broadly neoliberal-communitarian tradition of studies seeking to understand how social capital facilitates collective action and social and economic development, and a critical tradition which invokes social capital to understand how social inequality and disadvantage are (re)produced. Of social capital's most influential theorists, James Coleman (1988, 1993) and Robert Putnam (1993, 2000) belong to the neoliberal-communitarian tradition, although the former focuses on the micro-level of individuals and local communities and the latter on the

macro-level of regions and states; Pierre Bourdieu (1986) is a central figure in the critical tradition and tended to focus more on the micro- than the macro-level. Given our aims, we will concentrate on studies focusing on individuals, households and local communities. We pay less attention to the work of Robert Putnam despite its popularity. It moves too easily across scales ranging from states and regions to communities, neighbourhoods and even individuals, and often draws conclusions about micro-level behaviour from data at a higher level of aggregation (Putnam 1993; Helliwell and Putnam 1995). It is too macro-level oriented for analysing social exclusion and transport disadvantage, which often differ strongly between individuals, households and local communities.

<Figure 1 here>

The rational choice theorist James Coleman focused on social capital for two reasons. Not only does it facilitate collective action among self-interested individuals (Coleman, 1988); it has, on Coleman's view, waned since the 19th century due to industrialisation, urbanisation, the speeding up of transport and communication and the declining importance of household and church as society's central institutions (Coleman, 1990, 1993). This waning has produced a decline in social control and enhanced crime, free rider behaviour and other processes he took to be social ills. Coleman highlighted that the continuity and closure of social ties in local, tightly knit networks produces multiple benefits (Coleman, 1988): the costs of information search and exchange are reduced; obligations are more likely to be repaid because people's social environment is more trustworthy; and effective norms controlling socially undesirable practices are created and upheld more easily.

Despite its usefulness for understanding the relationships between social exclusion and transport, Coleman's (and Putnam's) approach to social capital can be criticised for various reasons. He adopted a narrow functionalist understanding of individual behaviour and held a romantic and naive view of community. That view side-lined the multiple ways in which social relationships are often imbued with conflict and power struggle. Like Putnam and many others, he adopted a static, sedentarist and increasingly obsolete understanding of community according to which trust and reciprocity are primarily generated in bounded, local spaces (Urry, 2007; Holt, 2008). Long-distance corporeal travel and internet use may be less common among individuals at risk of social exclusion (Warschauer, 2003; Limtanakool et al., 2006) but analysts should not a priori assume that the local area or neighbourhood is the most relevant spatial scale for the formation of social capital among such individuals.

Authors other than Coleman (and Putnam) provide more nuanced views on the effects of social capital, highlighting both positive and negative aspects. In a study of social networking in a gym in the UK Crossley (2008) showed how social capital generated many positive effects: it helped individuals to reframe the workout as fun and play and to remain committed to attending the gym, it provided a group identity to the participating individuals, it created a social space where members offered advice and counselling to each other and where they exchanged information and services, and it enabled various forms of collective action. However, the social capital associated with a particular group of gym visitors also excluded non-members, pushing them into an outsider position where the formation of their own social capital was thwarted. Where multiple groups of visitors with their own social capital had emerged, the perceived existence of another group tended to sharpen a sense of shared identity in each group and constitute group identities in a mildly conflictual way. Portes (1998), Quibria (2003) and Geys and Murdoch (2008), amongst others, have argued that

closure in social networks can generate 'negative' social capital and thereby perpetuate undesirable social norms, restrict personal freedom and alienate people from mainstream society; gangs provide a clear illustration of social capital's dark sides.

The distinction between bonding and bridging ties (e.g. Putnam, 2000) has been proposed in part to separate 'good' from 'bad' social capital. Bonding ties are relations within homogeneous groups and often based on kinship and friendship, whilst bridging ties are more heterogeneous relationships across circles of friends and relatives and across local communities. Sometimes a further distinction is made between bridging and linking ties; the former are horizontal and the latter vertical relationships that traverse social and economic differences (Woolcock, 2001). However, the bonding/bridging distinction comes with its own problems. One is the risk that bridging capital is coded as inherently good, whilst bonding capital is viewed more negatively (Greys and Murdoch, 2008). This is in part because the latter are supposed to help people to 'get by' and the former help people to 'get ahead' (Putnam, 2000). Woolcock (1998) argues, however, that bonding capital is often crucially important in the early stages of getting ahead for individuals and groups at risk of social exclusion. Additionally, distinguishing bonding and bridging ties is overly homogenising; it side-lines the heterogeneity, hierarchies and conflicts among members of each category (Cederberg, 2012).

The work of Crossley, Portes and others is to some extent informed by the critical thinking of Bourdieu for whom social capital is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectivity-owned capital" (1986: 51).

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Bourdieu's interest in social capital stemmed from his broader project to understand the (re)production of socio-economic differentiation and intergenerational disadvantage. Social capital was certainly not simply benign or universally good; he believed that oftentimes social capital perpetuated forms of inequality and disadvantage. Furthermore, his thinking on social capital is inseparable from his wider conceptualisation of capital, social field and habitus. Anything can be considered a capital if it serves as a resource for action, can be accumulated, and has an exchange value (Crossley, 2001). In a Bourdieusian perspective capital represents both a power relationship and a power resource (Wilthusen, 2009), and there are as many forms of capital as there are fields. The latter are social settings in which agents are located and occupy positions that result from the interactions between the specific rules of that field and the agents' capitals and habitus – their historically constituted and embodied dispositions, schemata, know-how and competencies that shape individual thought, perception and action and help to both reproduce and reconfigure fields and social inequalities (Bourdieu, 1984). Nonetheless, economic capital, symbolic capital (status), cultural capital (taste, the possession of cultural goods and long-lasting dispositions of the mind and body) and social capital are the most important forms of capital.

One of Bourdieu's (1986) key arguments is that these capitals are fungible and need to be traded for accumulation: "[s]ocial capital of any significance can seldom be acquired, for example, without the investment of some material resources and the possession of some cultural knowledge, enabling the individual to establish relations with others" (Portes, 2000: 2). This emphasis on fungibility is useful in counteracting the tendency in much neo-liberal-communitarian thinking to concentrate only on social capital. Another relevant aspect of Bourdieu's analysis is the separation of a person's social network from the quality and quantity of resources available through it. The volume of social capital a person possesses

therefore depends on the size of his network and the economic, cultural, symbolic and other forms of capital each member in the network can access (Bourdieu, 1986). This means that a large network of trustworthy bonding and bridging ties is no guarantee that beneficial effects accrue to individuals; this depends on how resources are distributed across those ties (Portes and Landolt, 2000; Cederberg, 2012).

Bourdieu's framework has been used for showing how social capital can enhance or at least reproduce rather than diminish social disadvantage. For example, in a study of young girls in a public housing estate in one of Sydney's inner suburbs Bottrell (2009) shows how education does little to improve their life chances because it cultivates a type of social and cultural capital to which the girls have little access and that does not resonate with their habituses; schools in the area and the interpersonal relations they facilitate entrench pejorative stereotypes more than that they redistribute capital and create trust among social groups. Siegman and Thieme (2010) highlight the ambiguous role of social capital in South and Central Asia. Whilst egalitarian networks of women across households may improve wellbeing and harness resistance to the status quo of gender relations, social capital within the family context reproduces masculine domination. These authors identify a clear gender disparity in who invests in a family's social networks – usually women – and who reaps the benefits – the adult men. They argue that social and other capitals are only partially fungible for the women participating in their research because of the structural gender inequalities characterising South and Central Asian societies.

Bourdieu's account of social capital can nonetheless be criticised. Owing to its focus on (the lack of) social mobility, it tends to conceive of individuals' behaviour as primarily instrumental in nature; its expressive dimensions pertaining to social identity are given

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limited attention. The account is also insufficiently sensitive to geographical context; empirical studies have shown that the ways in which capitals interact are often mediated by the particularities of time and space (Turner, 2007; Wilthusen, 2009 Onyx and Leonard, 2010). Additionally, Holt (2008) argues that Bourdieu prioritises social reproduction over change and tends towards economic reductionism by placing economic capital at the root of all capitals. Combining Bourdieu with Butler (1990, 2004), she theorises identities as performed in social practices and as embodied social capital: it is through social interactions in particular space-times that a much wider set of norms than trust and reciprocity become ingrained into one's identity and sense of self. She invokes the example of young disabled persons who are in many socio-spatial situations positioned as dependent on the help of others, internalise this positioning into their sense of self, and subsequently carry over this positioning into other situations where no help is available or self-reliance is the social norm. In this way social capital as embodied process can perpetuate inequality and privilege, but Holt emphasises that there is also opportunity for resistance and change: a reconfiguring of the practices through which identities are enacted can generate alternative identities and embodied norms.

3| Interdependencies

3.1| Entwined processes

The central idea of this paper is that social exclusion, transport disadvantage and social capital can be understood as entwined processes: in any given locality, for any person, community and/or social group, there likely exists a range of overlaps and pathways through

which these processes affect, and are affected by, each other. Patterns of causality are likely to be complex and characterised by feedback and non-linearity. It is nonetheless possible to abstract from the web of causal relationships comparatively simple pathways through which changes in the extent or qualities of one process – say an individual's transport disadvantage – cascade into changes into the level or character of social capital and from there to social exclusion. The exact shape and strength of these pathways is likely to depend on the local context under study and may vary between persons, groups and places (Gray et al. 2006). The pathways should be considered 'sensitising devices' – pointers for the formulation of hypotheses to guide empirical research in specific contexts – rather than general rules or regularities that will hold across empirical studies.

The pathways have been identified over a series of workshops by the authors over a single week in June 2012 in Oxford. The workshops brought researchers with an interest in the social effects of transport disadvantage but coming from different disciplinary backgrounds (human geography, social policy, civil engineering, political science, sociology) and working in different geographical contexts in both the Global North and South. Participants prepared for the workshops by reading a dozen key articles on social capital that had been selected by Schwanen and ten papers on transport disadvantage and social exclusion that had been put forward as relevant to the discussion by the participants. During the workshop the readings were discussed and in combination with the participants' broader expertise used to firstly create commonly agreed definitions and shared understandings of the key concepts of social exclusion, transport disadvantage and social capital, and secondly to elaborate the causal pathways through which those concepts are linked.

The current paper summarises the outcomes of the workshop discussions and also utilises the database of recent articles on social capital that was created for the purpose of identifying which causal pathways have been studied empirically in recent years. This database consists of articles published between January 2007 and May 2012 in journals with a Thomson Reuters Impact Factor for the year 2010 and belonging to the disciplines of transport studies, human geography, sociology, urban studies and public health research. The search for literature was limited to the five years preceding the workshop to keep the inquiry manageable. We do not claim that the list of causal pathways linking social exclusion, transport disadvantage and social capital presented below is exhaustive and we have created three sub-lists for heuristic purposes. In this way our discussion provides useful guidance to further research and extends Currie and Stanley's (2008) analysis of the links between social capital and public transport.

3.2| Starting from transport disadvantage

Implications for how people (can) travel for social capital have been discussed across a range of literatures. Putnam (2000) argues that the increase over time in solo driving in the USA is one of the processes that has contributed to the diminishing of the country's social capital in the period 1945-2000; Urry (2007) considers corporeal mobility the glue that holds together social networks; Currie and Stanley (2008) hold that public transport use can strengthen social capital by providing a safety net of transport options for (economically) disadvantaged groups, encouraging high-density living and enabling social interaction with fellow users during trips; and Lucas (2012) contends that transport disadvantage results in inaccessibility of goods, services, decision-making, life chances, social network and social capital, which

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then leads to social exclusion. Table 1 builds on and extends such arguments, outlining a series of pathways that are informed by Coleman (1988) – 1a and 1d – and the critical tradition in social capital thinking. Heeding the criticisms of Holt (2008) and others on Bourdieu's instrumentalism, we distinguish between pathways 1a and 1c-1f operating in the realm of instrumentality and 1b considering the expressive domains through a focus on identity.

<Table 1 here>

The pathways are described at a fairly high level of abstraction and contain multiple concepts. Example of basic transport resources include a bus service, bike or car; cognitive knowledge is exemplified by knowing about the availability is space and time of bus services, and skills by know-how regarding how to use a bus or read a timetable. Aspirations are illustrated by the level of (bus) service provision that is expected or considered acceptable, and autonomy reflects the experienced freedom to travel when and where one wishes. Social identity refers to the identity constructed in and through social interactions with others and is to some extent shaped by one's gender, class, ethnicity, and so forth; and negative externalities include traffic danger, noise pollution and poor air quality. The high level of abstraction also means that we do not refer to differences in the nature of the pathways based on gender, ethnicity and so forth in Table 1 (and further below), even though it is quite likely that such differences can be observed in actuality. It is not unlikely that Siegman and Thieme's (2010) conclusion about gender differences in the fungibility of social capital also holds with regard to corporeal mobility in different geographical contexts; similar differences may also exist with regard to ethnicity, class, and so forth.

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Juxtaposing Table 1 with studies published on transport disadvantage in recent years, we can conclude that none of the posited pathways has been explored in full using empirical data. Applying advanced econometric modelling to data from Greater Melbourne, Stanley et al. (2011, 2012) show that both the number of trips people take – a proxy for some of the dimensions of transport disadvantage as we have identified it – and the level of social capital are both correlated negatively with the risk of being socially excluded (cf. 1a, Table 1). The indicators of social capital differ between the two publications; the 2011 article includes indicators of generalized trust and contact with family members, whilst the 2012 paper includes measures of the size of individuals' bonding and bridging capital. The authors have thus followed Putnam (1993, 2000) and confirmed the view that greater social capital is likely to reduce the risk of non-participation in economic, social, political, social and cultural life. Yet, their study neither shows how transport disadvantage and social capital are interrelated nor takes reverse causality from social exclusion onto transport disadvantage and social capital into account. It provides limited insight into why – through which pathway(s) – lower transport disadvantage and greater social capital would reduce social exclusion. Currie and Delbosc's work with data from the same participants in Greater Melbourne takes away some of those concerns. Their structural equation modelling analysis shows that perceived access to public transport as well as cognitive knowledge, know-how and autonomy regarding the use of this mode of transport were negatively – albeit fairly weakly – associated with social exclusion (Currie and Delbosc, 2010); descriptive analysis shows that the extent of these manifestations differs between inner Melbourne, outer Melbourne, the city's fringe and the wider region (Delbosc and Currie, 2011). Currie and Delbosc do not, however, consider how social capital mediates the links between transport disadvantage and social exclusion.

Also relevant in light of pathway 1a is Carrasco and Cid-Aguayo's (2012) study of a richer and poorer neighbourhood in the Chilean city of Concepción. It shows that individuals owning a car – an indicator of basic transport resources – are more likely to provide and receive advice on important emotion-laden matters, to give and receive small money loans, to provide others access to work/shopping opportunities of for emergencies, and to exchange information about job opportunities than are non-car owners. However, they emphasise that the effects of car ownership on the mobilisation of social capital are secondary to those of income and are contextual: they depend on the neighbourhood of residence and the space-time configuration of one's social network. The authors (2012, page 1081) therefore argue for "a more central role for redistributive [income] policies compared with transport policies" in tackling social exclusion.

Recent transport-related research has generally failed to address the normative dimension of social capital and the associated normalisation effects (Holt, 2008) as captured by pathways 1b in Table 1. However, a few publications on ageing in urban planning and geography chime with the logic espoused in 1b. Audirac's (2008) advocacy of the use of the Universal Design philosophy in transport systems rests on the premise that systems designed specifically for older people and the disabled have negative implications for their social inclusion through social networks. Using qualitative methods to explore the mobility experiences of older adults in the UK, Schwanen and colleagues show how many older people have internalised norms of self-reliance through upbringing, interactions with others and more generic discourses about the value of independence, which makes them very reluctant to rely on rides from relatives or friends or use such mobility aids as a scooter to participate in social and cultural life (Ziegler and Schwanen, 2011; Schwanen et al., 2012). Reflecting deeply ingrained socially constructed norms some older adults chose non-

participation over having to rely on others or technologies other than cars and buses. Schwanen et al. (2012) also argue that in this way older people reproduce ageist understandings equating dependence on one's social networks with burden and undesirability. McQuoid and Dijst's (2012) study of the lived experience of daily travel among low-income single mothers in San Francisco, California is also relevant with regard to 1b, even though their focus is not explicitly on transport resources. McQuoid and Dijst show how these women exclude themselves from "high-end shopping centres, wealthy neighbourhoods or places of authority like the court house in which they anticipate being judged as socially inferior, or feeling "poor" or "ghetto" relative to their surroundings" (2012, page 32). Their study shows how normalisation processes enabled by the social capital in certain places create outsiders and adversely affect the quality of life of the mothers in question.

Direct empirical support for pathways 1c-f in the transport-related literature is very limited as well. In relation to 1d, Lo (2008) shows how in Jakarta, Indonesia the vast majority of the population has not benefitted from transport infrastructure investments in bus rapid transit and pedestrian plazas over the past two decades, which are oriented towards the elite and the city's (imagined) role in the global economy and effectively perpetuate the logic of infrastructure investment in the late colonial era. However, Lo does not chart directly how the transport disadvantage, social capital and social exclusion of unprivileged households in Jakarta has been affected by the investments. Rajé (2007) comes closest to confirming 1d. Her study in Oxfordshire shows that local transport policies and solutions without due attention for the needs of individuals at risk of social exclusion may constrain participation in economic, social and cultural life. If those individuals are incapable of influencing the definition of needs, comparative proposal evaluation, scheme design and subsequent evaluation they "may be rendered impotent in their control of interventions that will

ultimately impinge upon their ability to participate in activities [and that] work against the objectives of social inclusion" (2007, page 66). Rajé concludes that the communication gap between policy-makers and citizens must be filled so that the former can account in policy formation for how social networks and resources embedded in them are mobilised to secure participation in economic, social and cultural life by the latter. Various introductions to accessibility planning (1e) in the UK, USA and continental Europe are available (Lucas, 2006; Preston and Rajé, 2007) but there is little insight into how this has affected the transport disadvantage and social exclusion of particular individuals and groups.

3.3| Starting from social capital

Compared to the previous table, Table 2 is informed to a stronger degree by insights from Coleman (1988) and the wider neoliberal-communitarian tradition – pathways 2a-b and 2e embody the influence of that tradition most clearly. The greater role of neoliberal-communitarian thinking in Table 2 reflects in part that authors in that tradition have written more extensively about the effects than the genesis of social capital as they understand it. However, the darker sides of social capital and the ways in which it can perpetuate inequalities are considered through pathways 2c-d and 2f. As before, the pathways are formulated at a fairly abstract level and contain multiple concepts. The quantitative and qualitative dimensions of social networks mentioned in 2a refer to such factors as those networks' size, spatial configuration, composition in terms of age, gender, and so forth; the amount of economic, symbolic and cultural power; and – though we share Cederberg's (2012) and others' reservations about this classification (see above) – bonding, bridging and linking capital.

<Table 2 here>

Of pathways 2a and 2b, the ways in which the characteristics of social networks affect the exchange of support has been studied most extensively. Further to the results of Carrasco and Cid-Aguayo (2012) previously discussed, Rajé (2007) shows how socially disadvantaged individuals in Oxfordshire draw upon social support from their network to get around and participate in social life, and Silvis and Niemeier (2009) establish that Californian seniors living in the community and in retirement communities are more likely to rideshare if their social networks are larger and more active (although the effects of the social network indicators in their econometric model are only small in terms of magnitude).

Contributing to a larger literature on the travel behaviour of immigrants to the USA, Lovejoy and Handy (2011) provide an in-depth study of how Mexican immigrants living in six Californian cities secure car access through their social networks. They list seven factors shaping this process, two of which relate directly to the quantitative and qualitative dimensions of their networks: securing car access is easier if one's network is larger in size and from bonding capital – closer ties who are members of the same (ethnic) enclave as the person trying to get a ride or borrow a car. Other factors include the size of the favour, the spatiotemporal compatibility of the activity schedule of the car owner and person asking the favour, a person's ability to reciprocate in cash or in kind, and the recipient's attitude towards seeking help. Lovejoy and Handy write that some research participants experienced "feelings of embarrassment, guilt, and dread in approaching others" in relation to organising rideshares (2011, page 255). This could be understood in terms of the internalisation of socially constructed norms and pathway 1b above, much like described by Schwanen and colleagues

for older people in the UK who do not wish to depend on others. Another study by Blumenberg and Pierce (2012) shows how support from social networks enhances car availability and distance travelled and so reduces the risk of social exclusion among poor individuals from a Latino background. These effects were much less evident for poor individuals from other ethnic backgrounds, which seems to suggest that the interactions among social capital, transport disadvantage and social exclusion are dependent on cultural context.

Recent work by Di Ciommo and colleagues (2014) among residents in a Madrid suburb uses binary indicators of voluntary participation in non-compulsory meetings or activities and of receiving help with childcare or housekeeping in a mode choice analysis. This study is unique as the authors not only consider the exchange of help but also – albeit indirectly – the trust and norms embedded in social networks. Whilst not specifically focusing on social exclusion, Di Ciommo et al. show that the two indicators have opposite effects on the inclination to walk or use public transport: participants who receive help are more, and those engaging in voluntary activities less, likely to walk or use public transport. For the authors these results to some extent reflect differential time availability: help with childcare and housekeeping frees up time that can be used for walking and public transport, whilst participation in voluntary work imposes additional time constraints that make car use more attractive (cf. pathway 2d, Table 2). However, the two manifestations of social capital – especially receiving help – also reduce values of time, which makes walking and public transport more attractive. The authors do not draw this conclusion but their findings concur with the idea that higher levels of social capital are conducive to the use of transport modes in which contact with the wider social environment is more direct and less mediated by the protective cocoon that a private car provides.

To the best of our knowledge, no recent study has empirically explored how social networks have helped to mitigate the effects of such negative externalities as noise pollution and poor air quality, for instance by providing various forms of support in moving residence to better locations (2a). Likewise, and as already stated, there is a dearth of research on how trust and social norms are produced through social networks, and the ramifications this has for individuals', communities' and groups' transport disadvantage and social exclusion (2b).

Relevant to 2b and 2c is the modest literature on community transport – run by volunteers rather than government, typically in rural areas – in the UK and paratransit services in the USA (Nutley 1988, 2001; Cervero, 1997; Ryser and Halseth 2012). Yet, this literature focuses on the supply side and institutional arrangements and offers little insight into the extent to which community transport reduces transport disadvantage and social exclusion or helps to enact social stratifications. Ryser and Halseth's (2012) analysis of regional transport services for older adults in northern British Columbia, Canada provides circumstantial evidence for the assertion that the government transfers responsibility for transport provision to older people at risk of social exclusion onto volunteer organisations harnessing communities' social capital. Another example of a grassroots initiative that has attracted considerable attention in the transport-related literature is the walking school bus (WSB) whereby elementary school children walk to school under adult supervision (e.g. Collins and Kearns, 2005, 2010). An analysis of WSBs in metropolitan Auckland, New Zealand shows these to be more prevalent in affluent neighbourhoods with relatively low traffic injury risk because parents in low income and/or Maori-rich neighbourhoods "often lack the time, skills [and] resources to become a WSB driver or conductor" (Collins and Kearns, 2005, page 67). This can thus be considered an instance where the fungibility of social capital serves to

perpetuate rather than reduce transport disadvantage. On the other hand, Suau-Sanchez et al.'s (2011) case-study of noise reduction around Barcelona Airport shows that a combination of strong trust and bonds within a community adversely affected by the opening of a new runway with strong distrust in public authorities triggered protests, which led to new institutional arrangements and additional measures aimed at reducing noise pollution from aircraft. The authors also argue that the social capital created by the affected residents' association enabled not simply a reactive not-in-my-backyard (NIMBY) response in the local community but rather a pro-active disposition whereby residents contributed actively to resolution and proposed a number of solutions.

Pathway 2d is a variant of Church et al.'s (2000) time-based exclusion (Section 2.2), which could be studied easily using time-geography (Kwan, 1999; McQuoid and Dijst 2012). We are not, however, aware of recent studies among individuals at risk of social exclusion offering direct empirical support in favour of the stated pathway. Whilst 2e-f appear intuitively reasonable, few studies have been published since 2007 in support of the proposed pathways; readers are referred to Hodgson and Turner (2003) and Lucas (2006) for discussions of how participation by individuals and communities at risk of social exclusion in political institutions has the potential to reduce transport disadvantage and social exclusion.

3.4| Starting from social exclusion

The hypothesised pathways outlined in Table 3 replicate some of those incorporated in Tables 1-2. This reflects the complex patterns of causality and the many feedback loops through which social exclusion, transport disadvantage and social capital are linked together.

This also raises questions about modelling studies that assume causal links between these concepts to operate in a single direction. Few studies that have not already been discussed above can be identified that provide support for the supposed pathway. Some previously discussed studies (Rajé, 2007; Ziegler and Schwanen, 2011; McQuoid and Dijst, 2012; Schwanen et al., 2012) hint at some of the pathways but none engages them in depth.

<Table 3 here>

4| Synthesis: towards research priorities

Since 2000 a rich literature on social exclusion and transport disadvantage has come into existence (Lucas, 2012). Much of this work is animated by the desire to inform (policy) interventions that help reduce the adverse effects of social exclusion and transport disadvantage on the well-being of individuals and local communities. It is in this context that social capital has entered the literature on social exclusion and transport disadvantage (Gray et al., 2006; Currie and Stanley, 2008; Stanley et al., 2011, 2012). Alongside the excitement over Putnam's work among social scientists and policymakers in the 2000s, this context explains why research on transport and social exclusion has tended to fall back on neoliberal-communitarian understandings of social capital. After all, these understandings hold the promise that enhancing social capital will reduce – if not dissolve – problems of social exclusion and transport disadvantage. While Bourdieu's work has been used by some researchers seeking to understand the exchange of support among more-or-less disadvantaged individuals (Currie and Stanley, 2008; Carrasco and Cid-Aguayo, 2012), we believe that the full implications of thinking on social capital thinking for the analysis of social exclusion and

transport disadvantage have not been drawn out so far. To avoid naive and counterproductive recommendations to policy-makers and other non-academics, transport researchers should give greater consideration to (recent) developments in the critical tradition of social capital research and foreground the Janus-faced capacities of social capital as a medium for fixing problems of inequality as well as entrenching existing and creating new forms of inequality.

This paper has charted those capacities through a list of hypothesised pathways and analysis of previous empirical research in transport studies. The list is non-exhaustive; the ways in which these pathways are affected by virtual and communicative travel and the lived experience of using systems for corporeal travel have not been explored and need to be considered in future research. The pathways seek to highlight that social capital may help to perpetuate existing patterns of transport disadvantage and social exclusion, but also reduce such disadvantage and exclusion. We cannot say which outcome is more likely, for two reasons. One of these is that the interactions among transport disadvantage, social exclusion and social capital depend on the (geographical, cultural, institutional, and so forth) context of individuals and communities. The other is that the evidence base offered by previous research in transport studies is too limited, partial and sketchy to draw confident conclusions. Four priorities for future research can be identified.

Together with theoretical and empirical work in the wider social sciences, the available evidence assembled in Section 3 calls for careful design of future research. Critiques of Bourdieu's perspective (e.g. Holt, 2008) highlight the importance of avoiding deterministic thinking according to which social capital tends to reproduce inequality and exclusion. At the same time, it is equally myopic to expect the effects of social capital on the relationships between transport disadvantage and social exclusion to be necessarily benign. Empirical

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studies need to be designed such that symmetrical analysis can be conducted and the full ambiguity of social capital's effects can be explored.

Secondly, the gaps that emerge when Tables 1-3 are juxtaposed with the existing literature need to be addressed. There is a particular need for research that moves beyond the instrumental level of the exchange of support to the more intangible processes pertaining to trust, norms and normalisation. More empirical research is also needed that evaluates policies and grassroots initiatives to reduce transport disadvantage and social exclusion, including accessibility planning and community transport. It is particularly important to better understand the relative effectiveness of transport and income distribution policies in reducing social exclusion (Carrasco and Cid-Aguayo, 2012) and if and how transport policies, by affecting social capital, can reduce social exclusion in a manner that cannot be achieved by income distribution policies alone. Questions to be addressed include: How, to what extent and for who do policies and grassroots initiatives reconfigure access to transport resources, knowledge, skills, aspirations, autonomy and participation in economic, political, social and cultural life? To what extent and in what ways do they create outsiders and are certain people or groups excluded?

Thirdly, the literature review indicates that understanding of process in relation to the interplay of social exclusion, transport disadvantage and social capital is very restricted. In empirical research the emphasis has often been on analysing states rather than processes. Greater reliance on longitudinal research designs can address this concern, but only to a degree. The fundamental problem is one of over-reliance on variable analysis (Abbott, 2001; Crossley, 2008): thinking about social exclusion, transport disadvantage and social capital is concerned with the dynamics of actions by and relations among (human) agents, whereas

empirical analysis is often limited to (proxy) variables measuring fixed and static phenomena. This problem is not automatically resolved by the adoption of longitudinal research designs. There is, then, a need to complement quantitative research on social exclusion, transport disadvantage and social capital with robust application of qualitative methods that have been developed specifically to understand dynamics and temporality, such as oral histories and (mobile) ethnography.

Finally, if academics are to grasp the entwining of social exclusion, transport disadvantage and social capital more fully, they must also rethink the notion of causality. Much (quantitative) research into transport disadvantage and social exclusion infers causality from regularity in ways that are inspired by Hume (1985[1739]): if variations in (prior) x are conjoined with those in (posterior) y, x is said to be the cause of y. But causality comes in many more forms, which can be understood by drawing on thinking across the wider social sciences and philosophy. One potentially useful candidate for rethinking causality is the philosophical approach of critical realism would be very useful (Sayer, 2000; Pratt, 2009). Here the emphasis on regularity in (sequenced) events has been traded for a focus on what produces change and necessity. In studying how interacting processes produce an effect under particular conditions, critical realists distinguish necessary conditions (required for the effect's enactment) from contingent factors (or enabling factors). They seek to identify necessary conditions or real causes, which requires them to highlight the role of context – the particularities of space and time. This way of imagining causality has at least two advantages: researchers can begin to understand the causes of both unique and repeated events, and they can analyse why some cause generates effect a in one context and b in another (which would be useful to understand among others the context-dependent effects of grassroots initiatives – see Section 3.2). Perhaps, then, the most effective way of examining how social capital

mediates the links between social exclusion and transport disadvantage is through a research

programme that applies critical realism's understanding of causality to data gathered through

oral histories and ethnography in a great variety of localities in both the Global North and

Global South.

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