

Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

What do we mean by “community severance”?

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Abstract

This working paper collects definitions of community severance found in academic studies, government guidance documents, and reports produced in several countries. A new definition is proposed, based on the analysis of these definitions and on discussions held as a part of the *Street Mobility and Network Accessibility* research project.

Keywords

Community severance, barrier effect

1. Introduction

There is little agreement on the exact meaning of “community severance” even though this issue has been an object of concern for transport and urban planners since the 1960s. Researchers have proposed many different definitions of “community severance” and have used different concepts (such as “barrier effect”) to describe what is assumed

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Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

to be the same phenomenon. The development of further research on this topic, and its integration into transport planning, requires a clearer definition of the concepts used.

This working paper reviews a large number of different definitions of community severance and related concepts found in the literature, including academic studies, reports, and government publications from a variety of countries. Appendix 1 lists those definitions. Entries that are not originally in English are formatted in italics. The definitions in the original language are given in Appendix 2.

Section 2 of this working paper compares the concepts used in English-speaking countries and in other countries and the concepts used in definitions of “community severance” or “barrier effect”. Section 3 proposes a new definition of “community severance” based on the analysis of previous work and on discussions held as a part of an ongoing multidisciplinary project on the topic, the *Street Mobility and Network Accessibility* project, developed at University College London.

2. Previous definitions

Figure 1 and Figure 2 compare the terms used in studies in some English-speaking countries (UK, USA, Canada, Australia, and New Zealand) with those used in other countries (Brazil, Denmark, France, The Netherlands, Norway, Spain, Sweden, and Switzerland) and in international organizations in the definition of “community severance” or “barrier effect”.

The word clouds suggest that in English-speaking countries there is general agreement on the use of the term “community severance” to describe a phenomenon that is caused by “traffic”, “barrier(s)”, and “road(s)” and has “physical”, “psychological”, “local” and “social” effects on “people”, “pedestrians”, “movement”, and “access”.

Work in other countries places less emphasis on “severance” or related concepts (such as “separation”) and more emphasis on what is a “barrier” (“road” “traffic” and “infrastructure”), although the word “community” is also mentioned frequently.

Figure 3 and Figure 4 compare the terms used in the literature in all countries to define the concepts of “community severance” and “barrier effect” respectively. The

Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

words “community”, “communities”, “sever”, and “severance” were excluded from the former and the words “barrier”, “effect”, and “effects” were excluded from the latter.

The definitions of “community severance” are mostly related to the causes of the phenomenon (“traffic” “road(s)”, “barrier(s)”) but also with its effects on society (“separation”, “people”, “social”). The definitions also mention who is affected by the problem (“residents”, “pedestrian”) and how (“movement”, “physical” “psychological”). There is hardly any mention of transport infrastructure other than roads (such as railways) or of affected means of transport other than walking (such as cycling). “Health”, “cohesion” and “environmental” aspects are also rarely mentioned.

The definitions of “barrier effect” are mostly associated with the impact of “roads” and “traffic” on “pedestrians”. The main impacts are “physical” and are related to “crossing” (the road). Cycling is also mentioned. The definitions put little emphasis on social, health, and environmental aspects.

3. The Street Mobility definition

The definitions presented above suggest that “community severance” is caused by physical elements in the landscape, such as roads and road traffic, and have effects on the movement of pedestrians (usually defined as a “barrier effect”) and wider effects on local communities.

Discussions held as a part of the Street Mobility and Network Accessibility research project, documented in a previous working paper of this series (Anciaes, Boniface, Dhanani, and Groce, 2014) also identified three levels of severance:

- 1) The presence of a physical element in an area (roads, motorways, or motorised traffic)
- 2) What that physical element makes people do or not do (walking, or cycling, access places)
- 3) How that element makes people feel

Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

We then propose the following definition:

Transport-related community severance is the variable and cumulative negative impact of the presence of transport infrastructure or motorised traffic on the perceptions, behaviour, and wellbeing of people who use the surrounding areas or need to make trips along or across that infrastructure or traffic.

The definition is intentionally broad:

- The possible causes of severance include all elements of the transport system, not only busy roads.
- The effects are those on all users of the area including not only residents, but also workers, shoppers; and not only pedestrians but also cyclists and users of motorised transport (cars or buses).
- The definition considers the need to travel along or to cross the barrier, rather than assuming a set of destinations that people access.
- The effects are defined as “impacts on perceptions, behaviour and wellbeing”, which includes the effects of the barrier as a boundary to people’s notional neighbourhoods and the wider impacts of suppressed trips, pedestrian risk, and environmental effects on individual health and social networks.
- The emphasis on “variable” and “cumulative” impacts acknowledges the fact that the impacts differ on individuals with different needs (depending on age, gender, socio-economic status and other characteristics) and are potentially reduced with distance from the barrier (as the number of alternative destinations and routes increase) and with the time elapsed since the barrier was created (as people adapt their behaviour over time).

Street mobility and network accessibility:
towards tools for overcoming barriers to walking amongst older people

Figure 1: Word cloud of definitions of “community severance” or “barrier effect”: English-speaking countries



Figure 2: Word cloud of definitions of “community severance” or “barrier effect”: other countries



Appendix 1: Definitions of community severance and related concepts

Authors	Year	Page	Country	Type	Concept	Definition
UK MOT	1963	223 (glossary)	UK	Report	severance	[Severance is] the undesirable division of an area of closely-inter-related uses by a road carrying a heavy traffic flow.
Urban Motorways Committee	1972	13	UK	Report	severance	Any new major road, unless it is aligned with an existing barrier like a railway, or all existing crossings are maintained, will interrupt movement across its line. It may, therefore, change the journeys of people going to work, to shop, to school, to local amenities, or to visit other people. The provision for this movement, and particularly pedestrian movement, is accordingly an important matter in deciding the route and design of a major urban road.
OECD Road Research Group	1973	41	(OECD)	Report	severance	[Severance is the] psychological, cultural, and physical [impacts] which can be magnified, or introduced for the first time into an urban area by a street improvement or a new road [including effects on neighbourhood cohesion, displacement and relocation of persons and families, access to education, community, and shopping facilities, and response patterns of emergency services].
Lassière	1976	11	UK	Report	severance	The term severance is used [...] to denote the complex of perceptual, attitudinal and behavioural responses to the presence of a linear feature in the urban environment which inhibits communications across it. Examples of such features are railways, canals, rivers and roads. The inhibition may arise due to the detours involved in using infrequent crossing facilities and/or the aversive aspects which may be associated with the linear element, e.g. the accident risk, smell and ugliness associated with the traffic on a road.
Lee and Tagg	1976	270	UK	Empirical study	social severance	[Social severance is the sum of] all forms of human response to (or interaction with) a barrier in the environment. Attention should [...] be focused on the nature of these responses and on their measurement at various alternative levels; through perceptions of the barrier, through cognitions, through the structured organisation of these cognitions with motives and feelings (i.e. with attitudes) and finally, through behaviour.
Stanley and Rattray	1978	141	UK	Academic (review)	social severance	Social severance is seen as the rupture or impairment of relationships between people, relationships between people and institutions or relationships between people and places.
Korner	1979	4-5	Sweden	Report	<i>barrier effect</i>	<i>A barrier is a physical phenomenon with properties (tangible or intangible) that prevent, hamper or discourage cross-connections.</i>
Braddock	1979	172-3	Australia	Empirical	severance	[Psychological severance occurs] when despite the provision of crossings, people feel cut off from areas which were easily accessible before construction of a road or other barrier to movement [...] Physical severance of trips occurs when an impassable barrier is placed across an existing pathway. The degree of severance therefore depends upon existing patterns of trips in relation to the position of the barrier, and what the future pattern of trips might be in its absence. Points of severance depend on where people are travelling, their origins, destinations and pathways in relation to the proposed barrier. The amount of severance is the number of trips affected. The importance of severance in terms of social equity depends upon which people are affected, whether alternative destinations are available to them, and whether the extent of possible detours around the barrier will lead to trip suppression for the less mobile sectors of the population.
Planverket <i>et al</i>	1981	28	Sweden	Report	<i>barrier effects</i>	<i>Barrier effects refer to the impact of motorised traffic on the safety and accessibility of crossing pedestrian and bicycle traffic. It also covers the impact of motorised traffic on mobility, social contacts, and location.</i>
Borges <i>et al</i>	1983	29	Denmark	Report	<i>barrier effect</i>	<i>Barrier effect is the impact that occurs when the characteristics of the traffic prevent or hinder road crossings</i>
Grigg and Ford	1983	1	UK	Report	severance	The Urban Motorways Project Team have defined severance as the divisive effects a major urban road has on the inhabitants on either side of it. These divisive effects may be categorised as (a fall in the frequency of journeys made by households arising from an increase in journey time and a fall in household journey frequency arising from changes in environmental quality. The first category is sometimes called real severance and the second category perceived severance or psychological severance.

UK DOT	1983	Part B Section 4.1.1	UK	Official guidance	community severance	Community severance is defined [...] as the separation of residents from facilities and services they use within their community, from friends and relations and, perhaps, from place of work as a result of changes in road patterns and traffic levels. Severance may result from the difficulty of crossing a heavily trafficked road at grade, from a physical barrier formed by cuttings or embankments or from the legal prohibition of access for pedestrians and others to motorways or for traffic to pedestrianised areas.
Lervåg	1984	12	Norway	Report	<i>barrier effect</i>	<i>Barrier effect is the collective term for the impact of road and traffic barriers on pedestrians. The need for pedestrians to cross the road depends on the location of their destination in relation to the barrier. The important destinations for children are schools, playgrounds, leisure areas, kindergartens, and friends' homes. The important destinations for adults are workplaces, grocery stores and local services.</i>
SACTRA	1986	185 (glossary)	UK	Report	community severance	[Community severance is the] extent to which a road or proposed improvement cuts across established patterns of community activities or impedes their development.
De Boer	1986	124	Netherlands	Empirical	severance	[The impact which is labelled] barrier effect [or] severance [arises when] geographical links are cut off when a new road or railway is built. In urban areas especially residents are severed from their neighbours, children from their playgrounds, shops from their clients. The better the quality of the new infrastructure is with regard to traffic speed and the more heavily it is used, the stronger the impact will be. The barrier effect of a railroad with a frequent service is stronger because its barriers are frequently down.
UK IHT	1987	75	UK	Report	severance	Severance has been defined as the sum of the divisive effects a major urban road or heavy traffic flow has on the inhabitants either side of it. These effects can be either physical (i.e. actual barriers to movement) or psychological (i.e. perceived impediments to movement). Actual severance results in reductions in pedestrian journey frequency arising from the feeling of being cut off due to adverse changes in environmental quality.
Clark <i>et al</i>	1991	17	UK	Report	community severance	Community severance is the sum of the divisive effects a road has on those in the locality.
Wolff and Gillham	1991	222	UK	Academic (review)	community severance	[Community severance]: New urban motorways, or merely an increase in traffic flows on existing roads certainly have a pronounced severing effect. Residents are reluctant to cross busy streets, and the busier the road then the fewer friends and acquaintances they have on the other side, and the lower their social support within the local community. (...) In addition, increased traffic volumes on existing roads lead to increased noise, pollution, visual intrusion and loss of accessibility/mobility, which deter individuals from using local shops. This may lead to a decline in shops within walking distance of homes, increases accessibility problems for the car-less and increases congestion and pollution as resident car owners are forced to use their cars to drive to 'out-of-town' retail outlets.
UK HA	1993	5/1	UK	Official guidance	community severance	Community severance is defined [...] as the separation of residents from facilities and services they use within their community caused by new or improved roads or by changes in traffic flows.
Lahrmann and Leleur	1994	424	Denmark	Academic (methods)	<i>barrier effect</i>	<i>The barrier effect (danger of crossing the road) increases the vulnerability of some road users, who cannot cross the road unhindered and safely. It affects the possibility of walking, cycling, and generally, the ability to move in one's neighbourhood without hindrance from traffic, and reach shops, schools, and other facilities on the opposite side of the road. The feeling of danger can be so great as to discourage people from crossing the road. The barrier effect is thus partly a measure of the needs unfulfilled due to the presence of the road and traffic, and partly the delays, detours, and danger in crossing the road.</i>
Soguel	1995	301	Switzerland	Empirical study	traffic barrier effect	In urban areas, the barrier effect [...] affects pedestrians. The difficulty of crossing the road is influenced by the width of the roadway, the volume, speed and composition of the traffic, and any street environment adjustments (e.g. traffic lights, pedestrian crossings, pedestrian traffic islands). As the difficulty increases, the roadway appears like a barrier; pedestrians can no longer move around freely and social interaction can suffer.
Russell and Hine	1996	16	UK	Academic (methods)	traffic barrier	Traffic barrier is [...] the sum of inhibiting effects upon pedestrian behaviour resulting from the impact of traffic conditions; including physical (observable) and psychological (unobservable) impediments to pedestrian movement.
Tate	1997	7	New Zealand	Report	social severance	[Social severance:] The divisive effects that result from the provision and use of transport infrastructure.

Watkiss <i>et al</i>	2000	xi	UK	Report	community severance	Community severance [...] arises when roads bearing high levels of traffic cut through housing areas. The physical presence of the traffic, particularly heavy goods vehicles, as well as the risk of accidents, presents a barrier to the community, limiting or disrupting interpersonal networks and reducing social contact.
Guo <i>et al</i>	2001	chapters 2.2; 2.3	Australia	Empirical	severance	Static severance is caused by the introduction of a new highway with access control and high embankments where there are existing patterns of social interaction. A man made structure artificially divides an area into two separate parts so that it is difficult for one side to interact with the other. In divided communities severance becomes associated with detour journeys and an increase in the route factor, the need to construct pedestrian bridge crossings, and people giving up their previous connections. The direct effects of severance are trip diversion and suppression, poor accessibility and restricted personal mobility in the effected neighbourhoods. The indirect effects may be psychological, cultural and social severance [...] Dynamic severance is the time dependent barrier effect caused by conflicting streams of traffic movements among road users, derived from pedestrian activities and vehicles using the road. It results in divisive impacts on the surrounding environmental areas, including physical separation and psychological impediments [...] Dynamic severance focuses on pedestrian vehicle conflict, which includes pedestrian delay, diversion to other crossing points and accident risk.
Lucas <i>et al</i>	2001	6	UK	Report	community severance	In urban and suburban areas, the combination of road and junction design, traffic speeds, congestion and inappropriately parked vehicles can cause severance of communities and severely limit pedestrian activity.
Scottish Executive	2001	10-10	UK	Official guidance	severance	Severance deals with the positive or negative effects of a scheme on the ability to move around on foot, bicycle or horseback. It reflects in particular the improvement in or deterioration of the ability of the community to cross major road or rail links and thereby reach local destinations.
Read and Cramphorn	2001	14	New Zealand	Report	community severance	Community severance - the impacts on a community resulting from some of its features being severed by changes to roads, e.g. the variety of disruptive effects that new roads can have in a local neighbourhood or community, including changes in or loss of access to neighbourhoods, facilities or transport, changes to established patterns of activity, isolation of one area from another, changes to land use.
Saelensminde	2002	vi (English summary)	Norway	Report	barrier costs	Road traffic obstructs a realization of a "natural" amount of walking and cycling in the city areas. By "natural" amount of walking and cycling we mean that amount of walking and cycling that would have taken place if people could choose transport mode according to their preferences in a situation where road traffic did not cause insecurity and other inconveniences. [...] This non-realised benefit to the society is an estimate of the barrier costs caused by road traffic.
Handy	2003	119	USA	Academic (methods)	severance	Severance refers to separation or partitions between people, between people and places, or between two places. (...) Human communities are severed when a new facility, such as a freeway or a rail system, is built through an existing community and local streets are closed to accommodate the new facility. Natural communities may be severed when a new highway is built along a new alignment through an undeveloped area. Such impacts are often referred to as the "barrier effect," and may be as much psychological as physical, as much perceived as real. However, the barrier effect and severance are not quite the same thing. In a community that grows up around an existing highway or rail line, the transportation facility may serve as a barrier that impedes the creation of connections between people and places but it did not sever connections because none existed at the time it was built. Transportation projects can also contribute to severance by displacing residents and businesses, thus eliminating connections without necessarily creating a barrier. Severance can also be understood through its converse, at both a physical [connectivity] and a social [community cohesion] level.
Boon <i>et al</i>	2003	4	Netherlands	Empirical study	barrier effect	<i>Barrier effect is defined as the social effect which results from the movement and/or (potential) presence of vehicles on a section of infrastructure (or the presence of the infrastructure itself). This has a negative impact on the needs of the community, groups in the community, and relationships between these groups and individuals. It may be added that the needs can be satisfied at locations on either side of the infrastructure. Barriers plays a role at the neighborhood level, for example schoolchildren not being allowed to walk to school due to the presence of a busy road.</i>
Trafikministeriet	2003	59	Denmark	Official guidance	barrier effect	<i>The barrier effect is related to the perceived visual effects or risks caused by the construction or enlargement of infrastructure.</i>

Egan <i>et al</i>	2003	1463	UK	Academic paper (review)	community severance	[Community severance:] reduced access to local amenities and disruption of social networks caused by a physical barrier running through the community.
SEU	2003	20	UK	Report	impact of traffic on communities	Impact of traffic on communities: Busy roads can divide and damage local communities and restrict walking - especially amongst children and elderly people. Heavy traffic can cut people off from facilities because of fear of accidents. Some older people and disabled people can feel particularly intimidated by traffic.
Forkenbrock and Sheeley	2004	351 (glossary)	USA	Report	barrier effect	[Barrier effect:] The reduction in mobility and safety of nonmotorized travel caused by the construction of new transportation projects such as those that increase traffic volumes and speeds on existing roads.
Mouette and Waisman	2004	34	Brazil	Empirical study	<i>barrier effect</i>	<i>[Barrier effect] is defined as the restrictions or inhibitions caused by traffic and by roads, which cause an impedance to the free movement of pedestrians across the two sides of the road. Besides the physical barriers caused by roads and motorised traffic, the mobility of pedestrians is also significantly reduced by the risk to which they are exposed when walking, especially when crossing the road.</i>
Hodgson <i>et al</i>	2004	25	UK	Academic (review)	severance	Severance: The divisive effects that infrastructure and traffic can have upon communities and upon the scope of individuals to move around within the urban area.
Rajé	2004	269	UK	Empirical study	community severance	Transport can damage health through community severance, producing a range of direct negative impacts on health, including reduced social support, reduced access to facilities and restricted access for disabled people. In addition, severance creates indirect health effects, for example disruption of social networks and reduced social support, thereby affecting health.
Noonan	2005	1819	USA	Empirical study	barriers	Barriers [...] refer to physical features that mitigate the disutility of proximity to members of a group by their position in between the two groups. Barriers might be thought of as having the properties of insulators or buffer zones between two groups. This physical effect distinguishes barriers from symbolic or legal boundary demarcations. Barriers often also serve other purposes as traditional public goods like highways or parks.
Ecoplan and Metron	2005	68	Switzerland	Report	<i>pedestrian separation effects</i>	<i>The separation effect of roads on pedestrians is usually defined as the time losses suffered by pedestrians when they want to cross a road.</i>
James <i>et al</i>	2005	5	UK	Report	community severance	New or existing transport schemes such as roads or railways can have detrimental social impacts on communities. If a large or increasingly busy road cuts through an area it can have the effect of driving a wedge through a community, or communities. This can limit people's ability or desire to move through that area, which in turn can reduce accessibility to key services (such as health, education and employment opportunities and quality food shopping) and damage local social networks and community 'cohesion'.
UK House of Commons.	2005	part 2, note 19	UK	Report	community severance	Community severance describes the impact of high levels of traffic on the 'liveability' of a street. Where traffic dominates a street environment, the noise, danger, and physical obstacle of a 'river of traffic', can lower the quality of life and sense of community by preventing children playing outside, making it difficult for neighbours to meet, talk, and walk.
Thomson <i>et al</i>	2008	2	UK	Academic (review)	severance	Community severance: defined as reduced access to local amenities and disruption of social networks caused by a road running through a community.
NZTA	2009	glossary	New Zealand	Official guidance	severance	Severance: separation of people from facilities and services they wish to use within their community due to obstacles to access such as busy roads.
Dyett	2010	7	UK	Empirical study	community severance	[Community severance] can generally be described as the separation of residents from the places they visit within their community caused by a busy road or other transport link such as a railway.
CE Delft <i>et al</i>	2011	68	Netherlands	Report	separation effects	Road and rail transport infrastructure in urban areas lead to separation effects for non-motorised traffic. When crossing road and rail infrastructure, pedestrians have to wait (at traffic lights, crossings or railway crossing gates) and therefore lose time. These time losses can be regarded as external costs.

CROW	2011	11	Netherlands	Report	<i>infrastructur e barrier</i>	<i>An infrastructure barrier is defined as a road, railway or waterway that forms a physical and / or psychological obstacle for certain groups of the population present on one side of the obstacle.</i>
Héran	2011	1	France	Academic (methods)	<i>cut-off effect</i>	<i>The cut-off effect is a nuisance caused by transport infrastructures which cut through the land and limit local trips.</i>
Mindell and Watkins	2011	7	UK	Academic (review)	community severance	Community severance arises when roads bearing high levels of traffic cut through communities. The physical presence of the traffic, particularly heavy goods vehicles, as well as the risk of collisions and injuries presents a barrier to the community, dividing it into two. This limits or disrupts access to goods, services, and people.
Grisolia <i>et al</i>	2011	1	Spain	Empirical study	community severance	Community severance can be defined as the impact made by massive transport infrastructure going through populated areas dividing communities, disrupting their communication, reducing their accessibility and creating other environmental externalities.
Quigley and Thornley	2011	15	New Zealand	Report	community severance	[Community severance is the] separation of people from facilities, services and social networks they wish to use within their community; changes in comfort and attractiveness of areas; and/or people changing travel patterns due to the physical, traffic flow and/or psychological barriers created by transport corridors and their use.
Litman	2012	1	Canada	Academic (review)	barrier effect /severance	The barrier effect (also called severance) refers to delays, discomfort and lack of access that vehicular traffic imposes on nonmotorized modes (pedestrians and cyclists). Severance usually focuses on the impacts of new or wider highways, while the barrier effect takes into account the impacts of vehicular traffic.
Nørby and Melftofte	2012	9	Denmark	Empirical study	<i>barrier impact</i>	<i>The barrier effect is an overall measure of the nuisances experienced by pedestrians crossing a road, such as insecurity, psychological effects, delay, and decreased accessibility.</i>
Mindell and Karlsen	2012	232	UK	Academic (review)	community severance	Community severance occurs where road traffic (speed or volume) inhibits access to goods, services, or people.
NZTA	2013	390	New Zealand	Official guidance	community severance	Community severance is the dislocation and alienation a community feels as a result of roads which sever communities or hinder access. It includes the effect of traffic on security and mobility of people, particularly pedestrians and cyclists and the consequential effects on their movement patterns and interaction.
ECOPLAN and INFRAS	2014	21	Switzerland	Report	separation effects	Separation effects can be observed in urban areas, because pedestrians and cyclists must wait to cross roads and railways.
Bradbury	2014	1	UK	Academic (review)	community severance/tr affic barrier effect	Community severance, or the traffic barrier effect is a [...] phenomenon [...] where large or busy roads that pass through settlements can have the effect of driving a wedge through a community by limiting people's ability or desire to move through that area. This can reduce accessibility to key services and damage local social networks and community 'cohesion'.
UK DfT	2014	18	UK	Official guidance	community severance	Community severance is defined (...) as the separation of residents from facilities and services they use within their community caused by substantial changes in transport infrastructure or by changes in traffic flows. Severance will only be an issue where either vehicle flows are significant enough to significantly impede pedestrian movement or where infrastructure presents a physical barrier to movement.
Grisolia <i>et al</i>	2015	298 (abstract)	Spain	Empirical study	community severance	Community severance refers to the separation of people from facilities, services, and social networks within a community, and/or people changing travel patterns due to the physical or psychological barriers created by transport corridors and their use. Separation of neighborhoods and reductions of accessibility are some of the main effects of community severance.

Appendix 2: Definitions of community severance and related concepts (original language)

Authors	Year	Page	Country	Type	Concept (original)	Definition (original)
Korner	1979	4-5	Sweden	Report	trafikanläggningars barriäreffekter	En barriär är en fysisk företeelse med egenskaper (materiella eller immateriella) som omöjliggör, försvårar eller avskräcker från tvärkontakter. Den fysiska företeelsen kan vara fordonshastighet, buller, mörk gångtunnel etc.
Planverket <i>et al</i>	1981	28	Sweden	Report	barriäreffekter	Med barriäreffekter menas biltrafikens inverkan på säkerhet och framkomlighet för den korsande gång- och cykeltrafiken. I begreppet ingår även biltrafikens inverkan på förflyttningsvanor, kontaktmönster och lokalisering.
Borges <i>et al</i>	1983	29	Denmark	Report	barriereeffekt	Barriereeffekt er de konsekvenser, som opstår i omgivelserne til et trafik anlæg som følge af egenskaber, der umuliggør eller vanskeliggør tværkontakter
Lervag	1984	12	Norway	Report	barrierevirkning	Barrierevirkning kan stå som en samlebetegnelse på veg- og trafikbarrierenes konsekvenser for fotgjengerne. Fotgjengerens behov for å passere barrieren avhenger av hvor deres mål ligger i forhold til barrieren. For barn er skoler, lekeplasser, fritidstilbud, barnehager og venner viktige mål, mens arbeids plasser, dagligvareforretninger og nærservice er viktige for voksne og eldre.
Lahrmann and Leleur	1994	424	Denmark	Academic paper (methods)	barriereeffekt	Barriereeffekten (utryghed på tværs af vejen) omfatter de bløde trafikanters mulighed for uhindert og trygt at krydse vejen. Dvs. muligheden for ved gang, cykling mv. at kunne bevæge sig i nærheden af sin bolig og kunne nå butikker, skoler og andre tilbud på den modsatte side, skoler og andre tilbud på den modsatte side af vejen uden hindring fra trafikken. Utryghedsfølelsen vil kunne blive så stor, at den helt afholder folk fra at krydse vejen. Barriereeffekten er således et mål for, dels de behov, der undertrykkes af vejens og trafikken tilstedeværelse, dels den forsinkelse, omvej og utryghed, der opstår i forbindelse med krydsning af vejen.
Boon <i>et al</i>	2003	4	Netherlands	Empirical study	barrièrewerking	Barrièrewerking is gedefinieerd als een sociaal effect als gevolg van de beweging en/of (potentiële) aanwezigheid van voertuigen op een stuk infrastructuur (of de pure aanwezigheid van de infrastructuur), die in een negatieve sfeer invloed uitoefent op de behoeften van de gemeenschap, groepen in de gemeenschap, relaties tussen deze groepen en individuen. Daaraan kan worden toegevoegd dat de behoeften kunnen worden bevredigd op locaties die aanwezig zijn aan weerszijden van de infrastructuur. Barrièrewerking speelt onder andere een rol op buurniveau: het gaat dan bijvoorbeeld om schoolkinderen die niet alleen naar school mogen lopen vanwege de aanwezigheid van een over te steken, drukke autoweg.
Trafikministeriet	2003	59	Denmark	Official guidance	barriereeffekten	Barriereeffekten knytter sig til oplevede visuelle effekter eller risici ved anlæg eller udvidelse af infrastrukturen.
Mouette and Waisman	2004	34	Brazil	Empirical study	efeito barreira	Definiu-se o termo efeito barreira para denotar as restrições ou inibições ocasionadas pelo tráfego e pela via de circulação, gerando uma impedância ao livre movimento dos pedestres entre os dois lados da via. Além das barreiras físicas decorrentes do tráfego de veículos e da via, o risco ao qual o pedestre está exposto ao caminhar, sobretudo no momento de efetuar a travessia da via, constitui outro elemento significativo à queda de mobilidade dos pedestres.
Ecoplan and Metron	2005	68	Switzerland	Report	trennungseffekt fussgänger	Unter dem Trennungseffekt von Strassen für Fussgänger versteht man meist die Zeitverluste, die Fussgängern entstehen, wenn sie eine Strasse überqueren wollen.
CROW	2011	11	Netherlands	Report	infrastructurele barrière	Een infrastructurele barrière is gedefinieerd als een weg, waterweg of spoorweg die een fysieke en/of psychologische hindernis vormt voor bepaalde groepen van de bevolking aanwezig aan een zijde van deze hindernis.
Héran	2011	1	France	Academic (methods)	effet de coupure	L'effet de coupure est une nuisance des transports provoquée par les infrastructures qui découpent le territoire et limitent les déplacements de proximité.
Nørby and Møltofte	2012	9	Denmark	Empirical study	barrierevirkningen	Barrierevirkningen er et samlet mål for de gener i form af utryghed, mental belastning, ventetid og mindske tilgængelighed som fodgængerne oplever ved krydsning af en vej.

Street mobility and network accessibility: towards tools for overcoming barriers to walking amongst older people

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