

BILAN

The background features a series of parallel blue lines that create a sense of depth and movement, converging towards the bottom left. In the bottom left corner, there is a stylized illustration of a hand holding a pen, rendered in a fine-line, wireframe style. The overall color palette is light blue and white, with a solid dark blue horizontal bar at the very bottom.

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The accessibility of public transport is the pre-requisite for sustainable urban development, a sustainable environment and, last but not least, a partial litmus-test for true democracies.

YdesignFoundation aims to contribute to a better quality of life for citizens, communities and organizations by good design in its many forms, shades and shapes, be it graphic, 3D and/or interactive.

By means of this research program on the link between the perception of security and design, YdesignFoundation's objective is to contribute to the design of more positive context and surroundings, of improved management and infrastructure of public transport space, in other words, design that humanizes public space and invites passengers, passers-by and staff of public transport stations and public space to come and use it more frequently.

To be sure perceived insecurity and/or fear of crime incite us to deploy tactics and specific behavior to defend ourselves, our loved-ones and our belongings. They induce us to create a virtual private space around ourselves. In some cases, they become so predominant that we feel forced to have a preference for individual transport. Our emotions speed up the pace to differing extents and extremes. Depending on our capacity to understand the context and react to it, we proceed with ease to our destination.

Given these emotional triggers and the complex behavioral patterns they generate, perceived insecurity and/or fear of crime require examination from a human-scientific angle. For exactly that reason, the research team has been composed of experts in several, relevant disciplines. Their findings will help us understand why we circle in bee-lines, use our mobile phones, put our bag on the seat next to us while waiting, look straight ahead and nowhere else, or read the papers, suggests a need for control, reassurance and protection. The next question, how to meet that behaviour and how waiting and transit areas can be better conceived, designed and managed in order to make the tram, bus and metro-stations more than a non-lieu and the ride an enjoyable experience is what we aim to find answers to.

We hope reading this BILAN, the first of three reports (PROFILES November 2006, SOLUTIONS April 2007) may challenge your curiosity and guide decision making for operators, authorities in public transport and developers of public space in their assessment and meeting of the above detailed challenges.

*Anne Leemans
Secretary General
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1. Introduction:

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Design versus safety, first part: Report

This report contains the first of the three stages in the design versus safety project. The report examines the theoretical background of the project, and will be subject to a continuous development process during the project.

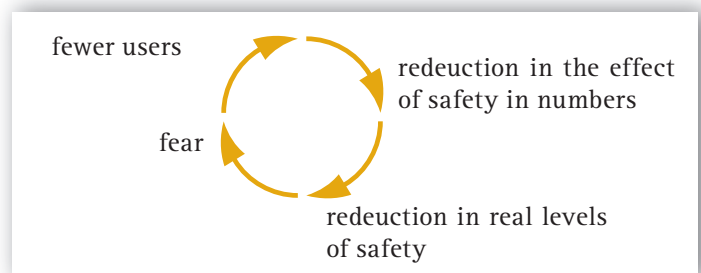
Design versus safety, the research project's objectives

The main objective of this research project is to increase the body of knowledge concerning the relationship between design and the perception of personal safety in public transport interchange stations. A secondary objective is to publish a set of practical and applicable guidelines and recommendations that (1) induce a higher perception of safety and well-being amongst passengers and personnel, and (2) allow public transport operators and decision-makers to develop a sustainable and design-based safety policy for inter-modal and interchange stations.

A sense of safety on public transport, a key issue

Safety and security have become major issues in urban politics and have simultaneously developed into a major theme for public transport. The issue of “fear of crime” largely seems to be a problem of perception, as levels of recorded crime on most transport systems remain relatively low. Fear of crime has a lot to do with insecurity that can be triggered by both “objective” factors – the real threat of assault – and “subjective” experiences – discomfort, uneasiness or the imagined threat of assault.

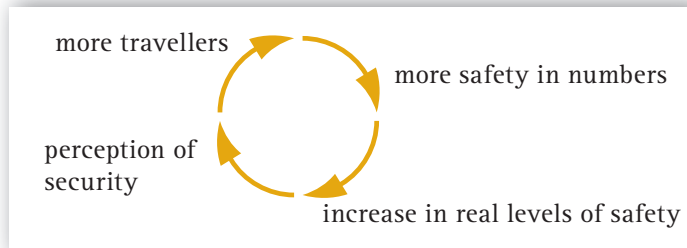
Whether objective or subjective, fear of crime has become a major enemy in public transport usage. The following diagram shows that “fear” reduces the number of public transport users and that as a result of the system being under-used, there is less social control and less safety:



(Diagram: Carr, K. and Spring, G., Public Transport: A Community Right and a Communal Responsibility, p. 149.)

The challenge

The challenge for transport operators and planning officials is to reverse the “cycle of fear.” This requires a “whole journey” approach. Enhancing positive user experience of the station environment forms a vital part of this cycle.



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From rational to emotional solutions

Restoring the feeling of safety is now a top priority among operators. In this process, operators and decision-makers seem to aim for effective, technical and economical solutions. Concern focuses foremost on “direct” and “objective” security measures such as camera surveillance. These strategies are mostly “accountable” but might not always reflect the actual concerns of passengers and personnel, nor are they always adequate on an emotional level, i.e. in restoring a sense of safety.

This project is aimed at solutions that positively guide the emotions of the public transport user, so that he or she feels secure, safe and at home in the system. It is our intention that the design of the transport environment should contribute positively to the required shift in perception. The look and feel of a place, as well as the legibility of the stations, can have an important impact on people’s emotions and their awareness of themselves as well as others.

We would also argue that, on the whole, integrating “safety” into the design of stations is cost-efficient and likewise more sustainable to implement when compared to installing and maintaining repressive measures or technical security equipment.

The importance of this project and its stakeholders

The realisation of public transport that is perceived to be safer can lead to more users and higher revenues for operators. In a wider context, more successful public

transport offers sustainable answers to multiple problems: constant city growth, population increases in cities, mobility, traffic congestion, pollution and stress, which all reduce the quality of urban life as well as having a negative effect on the economy.

The importance of public transport that is perceived as efficient, pleasant and positive is therefore strategic; this is not only an objective operators are striving for, it is also shared by decision-makers at the highest political level. This research project is also of European importance, as stakeholders face similar problems all over Europe with regard to the deployment of safety strategies in public transport.

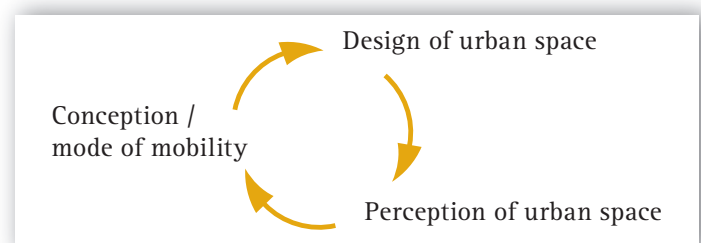
A multi-disciplinary approach

Amongst most operators, we can expect the theoretical knowledge concerning the design versus safety issue to be limited. This project aims to complement the operator’s knowledge on the matter, by gathering and associating the ideas established on this topic with each other, and by synthesising the result of these findings into practical guidelines.

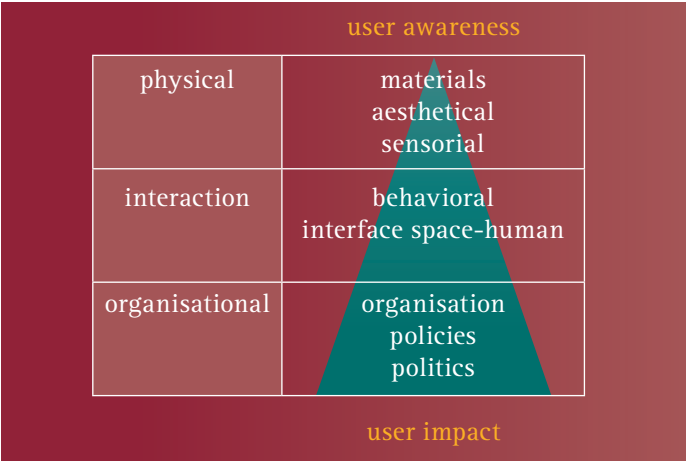
The first phase of this research project (the report) contains a non-exhaustive review of the available literature. This phase is not aimed at “prescriptive design solutions” applicable to public transport. Instead, through comprehensive theory, it identifies a wide range of ideas and actors that have an impact on the perception of safety in the public realm, including interchange stations. Given the complexity of our subject matter, we adopted a multi-disciplinary approach and worked across the lines of critical theory, applied research and political debate.

The three research dimensions

Desk research identified three main research dimensions that were relevant to our topic and were dealt with in three chapters. The first chapter is mainly concerned with the construction of the urban space in general, and the dominant ideas and visions of mobility, coupled with modes of mobility (e.g. car, public transport, bicycle, etc.) that have an impact on the design and planning process. In chapter two, the emphasis shifts from the actors and ideas involved in the construction process to the user and his or her perception of the urban space. However, the latter again bears on the ways mobility is conceptualised and the mode of mobility adopted, closing the circle as the following diagram shows:



While chapter one and two provides us with theoretical insights into the construction and perception of the urban space, chapter three gives us more practical answers as to how to involve public perception into the design process. The following diagram shows the three levels on which the desk research was conducted:



The first level concerns the organisational aspect, which relates to politics and mobility policies. The second level deals with interaction and behaviour. How people react towards other people and their environment. Finally, the third level links the material, aesthetic and sensorial aspects of the physical environment to crime prevention strategies employed in the field.

The following paragraphs outline the principle themes and sections of the three main chapters in more detail.

Chapter I

Public Transport in its Context: Theories on the Design of Urban Space and the Impact of Mobility.

The body of literature dealt with in this chapter is derived from social sciences, urban planning and architecture, bearing on the construction of urban space, cities and citizenship, sustainable development and physical mobility. These works are theoretical and reflexive, revealing a concern for public transport, design and contextual issues. The chapter particularly addresses designers, architects, urban planners, operators and decision-makers. It invites them to approach design and the construction of interchange stations in a well-thought-out and creative manner.

The section on “Mobility and the Built Environment” reveals how different modes and conceptions of mobility have affected the built environment over time. This historical approach towards mobility and architecture allows for a better understanding of the ways design decisions affect our surroundings. The third section examines the effect of mobility on social reality, through its impact on the built environment. It researches the role of public transport – by providing an alternative to car dependency – by fostering social inclusion and cohesion, and diminishing societal “angst.”



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The fourth section on ‘Mobility and Power’, covers the strategic role public transport has as a planning instrument and illustrates that urban planning and design is about giving order to space and giving form to society, which in turn is about marking boundaries and identity politics.

Having contextualised public transport and interchange stations by examining the interplay between (1) mobility and the built environment, (2) mobility and social reality, and (3) mobility and power, in the concluding section of this chapter, we answer the question asked earlier: how can we conceive and consequently design interchange stations?

Chapter II

Theoretical Underpinnings of the Sociological Field Research

The body of literature that bears on this topic consists of the behavioural and social psychological studies carried out by social scientists. This chapter particularly addresses designers and architects of transport environments by providing insight into social activity and interaction, and strategies or provisions that enhance the perceived level of safety. Given that the observations made in this chapter will guide the research in the next stage of this project, we therefore elaborated on the fieldwork process in some depth.

In chapter two, the focal point is the user and his or her perceptions of (in)security, and social interactions within the built environment. The chapter is divided into four main parts. The first two parts cover the notion of fear of crime, from a psychological and a sociological perspective.

The first part reveals how research on fear of crime has evolved and deepens our understanding of the phenomenon by outlining the four main research dimensions in approaching the notion of fear of crime.

Part two looks at fear of crime in terms of different levels of uncertainty, as it is understood by the renowned sociologist Zygmunt Bauman. Consequently, the chapter provides us with a historical reading of the former status of the

The theoretical insights provided in this chapter will guide us during the fieldwork process in which we will observe and record the strategies people use in interchange stations. The observations and reflections we will make will help direct design development and changes to public transport interchange stations.

Chapter III

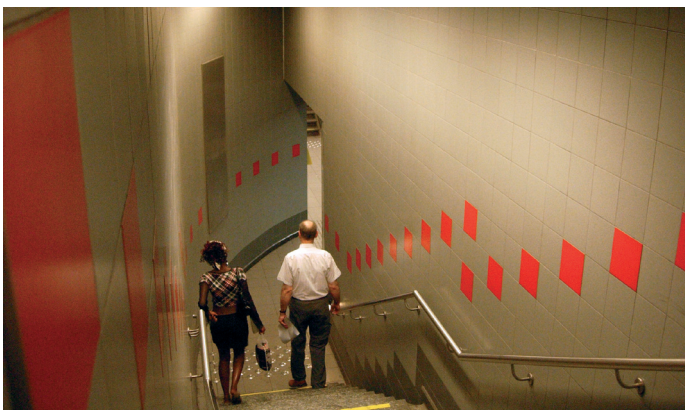
Environmental Design Related to Crime Prevention and (In)security

Studies were sourced that provide practical guidelines, strategies and policies for safe environments. The authors and initiators are criminologists, architects, policy-makers, planning officials and transport operators. This chapter particularly addresses designers and architects of transport environments, by providing insight into “environmental crime prevention” and strategies or provisions that enhance the perceived level of safety.

The chapter introduces theoretical and practical studies that relate design with (in)security and crime in the built environment. The chapter thus directly links design with the issue of safety. More specifically, it examines the origin, philosophy and strategies of ‘crime prevention through environmental design’ (CPTED). Indirectly, the role of the physical environment with regard to the experience of (in)security is assessed, as in the so-called Broken Windows Theory. The chapter concludes with the introduction of some practical guidelines and solutions.

Chapter IV: Fieldwork and Appendix

In the fourth and final chapter, the desk research outlines the method and research practices that will be applied during the fieldwork in the second phase of this project. The appendix also includes a study on the impact of the senses, i.e. smell, touch and hearing, on criminality and fear of crime. It further contains an urban and architectural analysis of two metro stations: Diamant in Antwerp and Brouckere in Brussels.



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stranger, the former role of civilities and social interaction with the built environment, and how we have arrived at today’s “problems”.

Part three covers social interaction in interchange stations. First we look at the uses, ruses (alternative uses) and abuses of a place, before reaching the fourth and final part of this chapter: urban strategies. The strategies people apply in urban spaces are rituals that regulate inter-personal traffic in the public realm, breaches of which may generate, especially for women, a feeling of insecurity and an unsafe environment.

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Chapter 1

Public Transport in its Context: Theories on the Design of Urban Space and the Impact of "Mobility."

Introduction

In the first instance, this paper challenges designers, architects, operators and other decision-makers to think reflexively about the consequences of their design decisions.

We start with raising some questions as to how we define or imagine public transport interchange stations. The mental picture we have of interchange stations is important as it has an effect on the design guidelines we develop for the intended design outcome of interchange stations. Consequently, we shall take a look at the ideas behind mobility, especially car mobility, which has a profound impact on the built environment, not least of all through land use.

It reveals that the way mobility is defined and understood by designers, architects, decision-makers, users, etc., influences how public transport is conceived/designed and subsequently perceived. The general importance (or non-importance) attached to public transport not only affects the built environment, but it also bears on social reality in several intricate ways. This brings us to our third topic that examines how public transport is intertwined with social reality and citizenship. Consequently, the dialectics between mobility and power are analysed. Finally, the paper concludes with imagining the public transport interchange station as a “heterotopia”, a public space in its own right.



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1. Imagining the Interchange Station

Are public transport interchange stations spaces, places, or rather non-places, without any identity, history or relations, as the French anthropologist Mark Augé argues?¹ What is their function in the city and how does their functionality compare to their role as a public space in its own right? Should we accept the notion that many public places have lost their meaning and identity due to perpetual change? Should we then contemplate and regret this loss or, on the other hand, celebrate this fact as the famous architect Rem Koolhaas shows us with his “generic city,” arguing that stripping a place of its identity is the only way forward, freeing people from their constraints?²

The way we answer these questions bears upon the ways we perceive and conceive urban space, which includes public transport interchange stations. Furthermore, our perception and conception, apart from being dependent on the “genius loci”, or spirit of place, is also dependent on the “Zeitgeist”, or time spirit. Time is represented and constructed through space. It is as if it were captivated by it. This explains why today, for example, most metro stations built in the 1970s appear outdated and dysfunctional. By contrast, the Moscow metro system, which began construction in the 1930s, is famous for its art, mosaics and ornate chandeliers.

Therefore, there is good and bad design and good design is timeless, somehow beating the clock and obtaining a universal status. Bearing in mind that the built environment – like the people who conceive it – is always a product of its time and place/culture, it becomes possible to adopt a more reflexive and self-critical point of view with regard to developing design guidelines for the future. In order to plan how public space needs to be designed and/or re-designed, the past offers various examples from which one can learn.



2. Mobility and the built environment

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2.1. Defining mobility

Mobility is understood here in a generic way as physical mobility, as opposed to virtual and social mobility. It is defined as a person's ability to move from one real place to another either on foot, or by some intermediate means, i.e. an organic entity (human or animal) or an inorganic entity such as a bicycle, a car, a plane, a motorbike, a boat, a tram, bus, metro, etc.

2.2. Mobility impacts on the built environment

The history of urban planning shows that physical mobility has always affected the built environment, especially since the mass production of the car and the emergence of a global car culture. The car has radically transformed the urban landscape, with an impact on land development patterns, and it has led to urban sprawl or suburbanisation. The problems this has entailed are legion. Congestion, pollution and accidents are the most well known but more structural problems are the formations of mono-cultural enclaves in and outside the city, together with de-urbanisation in

which inner cities become depopulated and mono-cultural. We only have to think of the inner-city neighbourhoods in downtown LA associated with “ghetto” conditions and immigrant status that has led to the flight of the middle-class.³

2.3. Mobility has changed our perception of the spatial environment

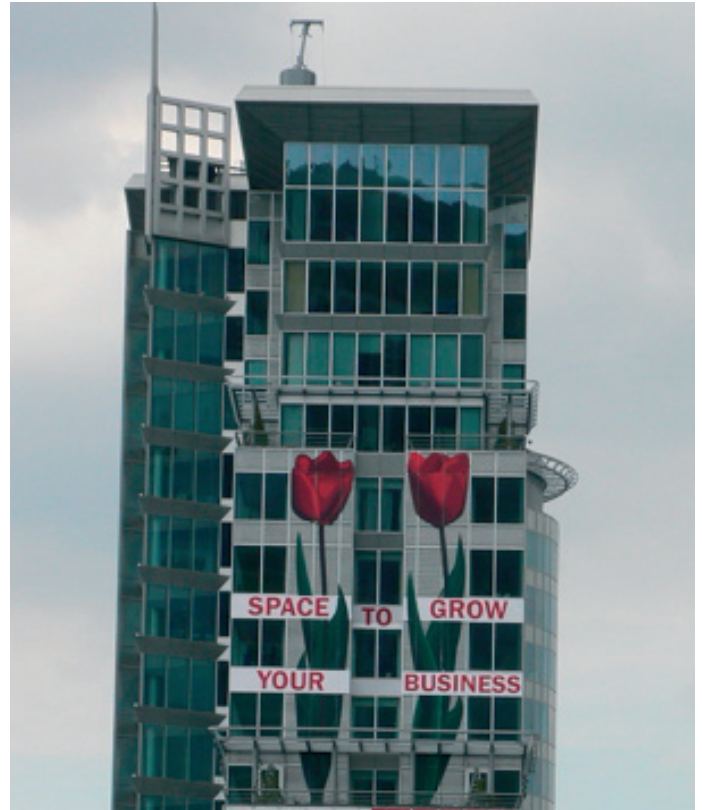
The increasing pace of mobility, especially auto-mobility, has led to a changed perception of and relationship with the spatial environment. This relationship is loosening and becoming temporary, entailing carelessness and ignorance towards urban public spaces.⁴ The temporality of places also feeds insecurity and fosters the need for a sense of continuity and history.

But how does “pace” affect people’s perception of their surroundings and relationship with it? Gordon Cullen explains this with his concept of “a serial vision”. This is based on the understanding that the faster one travels, the faster one has to process the images of the urban landscape around oneself, leading to a loss of depth of perception, which in turn diminishes the exchange of information and quality of communication. This explains why advertisements on the road are always becoming larger and are increasingly concealing the built environment.



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Given that public transport interchange stations are temporary by nature, the urban designer is faced with a challenge when it comes to improving people’s perceptions through the design of these specific areas.⁵ It may also be the “temporary” nature of the interchange station, as a place we move through rather than reside in, that explains why these areas are often confronted with problems of negligence and vandalism.



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2.4. Mobility Modes versus Mobility Types

Mobility’s pace is linked to the mobility mode one uses to go from one place to another. We will be describing how mobility modes have affected the built environment and its perception over time. Such a historical approach towards modes of mobility provides us with reflexive insights into how to plan the future urban environment.

I have compared Shridhar Whasikar’s historical approach towards mobility, based on a case study in the urban region of Pune, India with the so-called “mobi-types” of the Dutch

urbanist Luuk Boelens. Through his mobi-types, Boelens analyses the motives and ideas behind the modern urbanistic trends of Western tradition. While Boelens’ approach is more general and sociological, Whasikar is more specific and anthropological. However, the latter’s conclusions are easily transferable to other parts of the world, including Europe. What both approaches have in common is the important role attributed to the car in determining the form of the urban landscape.

2.5. Mobility Modes

Washikar in his model describes how the type of built environment in Pune changed in relation to the pattern of mobility, from the Middle Ages until now. The following table shows how he approached mobility historically:

Patterns of mobility
1. Walking era
2. Horse, car and railway era
3. The streetcar era
4. The automobile era
5. The private automobiles era
6. The virtual media era

1. Whasikar describes Pune in the Middle Ages as largely pedestrian, with space mainly concentrated within buildings, allowing for a limited controlled secure environment. This reminds us of the mediaeval towns in Europe that were enclosed by ramparts.

2. In the horse, car and railway era, under British rule (1871), the area expanded and city accessibility improved for administrative and trade functions. Bungalows within gardens and large open campuses were typical of the built environment at this time. In Europe in the nineteenth century, ramparts were being demolished and large boulevards were created that allowed for the quick movement of troops to put down rebellions.

3. In the streetcar era in the 1920s, the city of Pune spread outward along roads, in an erratic star-shaped pattern. Because of increased commuting to the city, corridors became commercial strips. Prototype buildings emerged as a result of mass production. Growth signified intense competition and demanded new more alluring images and competitive behaviour.⁶

4. In the automobile era after 1960 and industrialisation, land development patterns changed and suburbs became attractive for developers. The mass production of cars allowed the upper middle-classes to commute to the city, providing a solution to the problem of distance. This was the era of urban sprawl and a type of built environment characterised by geometric structures, concrete and modernised simplistic architecture that ignore the context.

5. Next in the private automobile era, which was the era of post-modernism and the democratisation of the car, the built environment was typified by an emphasis on art and decoration. As the speed of travel increased, no contextual references were necessary needed for the fast-moving viewer, resulting in skin-deep architectural surfaces. This translated into an eclectic melting pot of conflicting styles, ranging from Greek and Egyptian to Victorian, etc.



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6. Finally, in today's virtual media era, the city has expanded around the central core owing to the automobile and IT industries, and the idea of proximity has changed radically. The fusion of digital and physical space alters the perception of space, reality and binding. Physical reality has become detached and there is an intense competition for space. The impact on the built environment is glossier surfaces and bright colours that have to attract the viewer's fleeting eye. Because of the new virtual links that are being formed, the "perception of urban space in relation to the collective domain is lost."⁷



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2.6. Mobility types or mobi-types

Whasikar's description of mobility patterns in Pune shows that mobility, especially auto-mobility, has a profound impact on the urban environment and experience. However, it does not explain the visions or ideas behind these mobility patterns. Here Boelens' model of mobi-types is very useful.⁸ Boelens developed six so-called mobi-types which he uses to describes the ideas and visions behind modern mobility patterns or modes. He reveals that there are different definitions or understandings of mobility and that each has a different impact on the built environment and experience.

The following section briefly outlines each mobi-type, as described by Boelens.

Mobi-type 1: The drive-in – freedom of mobility

The first mobi-type Boelens describes is linked to the idea of the drive-in and associates mobility to freedom, the railway and the car. We only have to think of road movies such as *Thelma and Louise*, *Y tu mamá también* or *Easy Rider* that represent the myth of freedom and mobility. This utopian idea of mobility is embedded and promoted in the visions

of the great 19th and 20th century architects such as Frank Lloyd Wright with his Broadacre City, and Ildefonso Cerda who designed the extension (or “Ensanche”) to Barcelona according to a grid plan. Broadacre City was a development plan for a suburb based on the utopian vision that each family needed a house, a plot of land, and a car. This was very much the antithesis of the city and transit-oriented development. Such urban planning led to urban sprawl and the drive-in house, drive-in restaurant, shopping mall, etc., which were all ways to avoid contact with the “angry unsafe space of places.” But owing to the success of the car and the phenomenon of urban sprawl, stress and a sense of captivity as a result of congestion have increasingly replaced the sense of freedom associated with the car.

Mobi-type 2: The strip - mobility conditions

The second mobi-type is the strip that connects the city with the country via public transport. Here, public transport defines the layout of the city. An early example of this is “Ciudad Lineal”, or the linear city, which was designed alongside the first railway/tram line in Madrid by Arturo Soria Y Mata in 1875. It is not urban sprawl that is important here, but the link. The idea behind this linear vision was that Madrid could be connected to Brussels and St-Petersburg. The city would thus be ruralised and the countryside urbanised.⁹ This idea runs counter to Howard’s garden city movement, the outcome of which was urban sprawl. The urban development of the strip was celebrated by Denise Scott Brown and Robert Venturi in “Learning from Las Vegas” (1972), in which they argued that “the vulgar billboards” of Vegas ought to be regarded as emblems for a new architecture. But the urbanised strip also has its own problems as satellite pictures reveal that large parts of the world have become one big corridor with no structure.



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Mobi-type 3: The Cruise - “mobility as a way of life”

The third mobi-type refers to the architecture historian, Reyner Banham, who uncritically celebrated the idea of mobility as entertainment combined with the well-designed freeway. Cruises and the Orient Express are examples of the fusion of movement and leisure.

Mobi-type 4: The caravan - mobility as nomadism

In this mobi-type, mobility as a way of life is expanded but does not follow a specific course anymore. Everything has become footloose. Our network society demands more flexibility and movement. Here, Boelens refers to the architectural plans of Yona Friedman’s Ville Spatiale (1957-1960) and Constant Nieuwenhuis’ New Babylon. These futurist

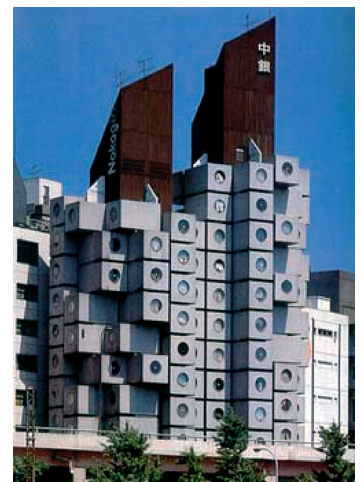
plans are early examples of this idea of mobility. In our present-day society immigration and tourism by tent, caravan and camper are the cultural manifestations of the city on the move. Furthermore, through telecommunications everything seems to have become mobile: the mobile home, mobile office, mobile shop, mobile leisure. The negative side effect of the city on the move is that it entails defensive spaces and loss of contact.

Mobi-type 5: Nodes - mobility segregates and binds

This mobi-type is probably the most relevant to our research project because it understands mobility in terms of nodes that have a binding potential. Examples of nodes are petrol stations, airports, railway stations and metro stations. There are the nodes in our network society that have the capacity to become the central squares or public spaces of the future. Here, the “space of flows”, in the words of Manuel Castell, meets the space of places in a non-exclusive way. Here, people of different colour, culture and social class come into contact with each other. But there is a problem with well-developed nodes, as Boelens points out: instead of striving to achieve multi-cultural and multi-functional objectives, they have become nothing more than consumer paradises.

Mobi-type 6: The cocoon - mobility in the interior

Mobi-type 6 concerns the virtual dimension of mobility, which involves the information highway. We can be mobile while sitting in front of our computer surfing on the web. While this idea of mobility may solve the problem of congestion, it does, however, lead to what Lieven de Couter calls “a capsular society”. De Couter refers to the Japanese architect, Kisho Kurokawa, who celebrated the fact that we have entered a capsular age in his 1969 Capsule Declaration. The capsule is the abode of the “Homo Movens”, the person on the move, who will slowly lose the need for possessions and emancipate himself from the ground and buildings. Boelens, like de Couter, points out that by retreating to a capsule or cocoon-like environment, such as the car, public space is losing its meaning. What’s more, because of mobile phones and the like that allow us to conduct intimate conversations in public, the distinction between the public and private domain is being eradicated. These new technologies promise us contact with the entire world. But at while we are close with people faraway, we are alienated from people close by. As Boelens puts it: “All of us have become individual en masse. All of us have become solitary en masse.”



Nagakin Capsule Hotel,
Tokyo, Kisho Kurokawa



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3. Mobility and Social Reality

3.1. Public transport fosters social inclusion and cohesion

As we have just seen, major urban changes were caused by car mobility. Public transport also exercises a major influence upon the urban environment. However, rather than causing problems (segregation, dispersal, periphery), it also offers solutions through the dialectic of centrality, by connecting areas and public spaces, and by making these accessible to all. In this way, mobility truly has a civic function, fostering social inclusion and cohesion.

Especially in under-privileged neighbourhoods, the lack of alternative transport leads to social exclusion. Because of the lack of public transport, people become car dependent. Having a car means having access to employment, health, recreation, shopping, etc.¹⁰ Because of the cost of running a car, car dependency for low-income groups contributes to poverty.

Thus, public transport not only fights car dependency, but it also counters poverty and the creation of a “dual society” that might foster angst. Everywhere in the world, the gap is widening among urban dwellers. The deprived live in isolation next to the more wealthy, who share in economic welfare. According to Rem Koolhaas, this dual society is a model for the city of the 21st century. Research in advanced industrialised countries has demonstrated that high-income earners live in “desirable suburbs, inner-city apartments and regenerated historical areas”, while the low-paid and unemployed live in decaying urban spaces.¹¹ “The notion of leaving urban development primarily in the hands of private enterprise also implies that it is the market which will determine social outcomes, with potentially unequal community impacts.”¹²

Socio-economic segregation is expressed socially and leads to the formation of mono-cultural neighbourhoods characterised by long-term unemployment. Social disintegration is an important issue in cities. Hence, the increasing political importance attached to opportunities for more integration and social cohesion. The role of public transport in this process of integration is crucial.

4. Mobility and Power

4.1. Giving order and giving form to society

The way governments perceive mobility leads them to invest either more in public transport or more in roads. With the car still being the most dominant mode today, mobility is often reduced to car mobility. Governments still often promote car dependency through their planning policies, especially in terms of land use. The dependency of public transport on political systems can be illustrated by the fact that in the 1920s, public transport was probably more advanced in the US than in Europe. For example, Los Angeles' electric rail system in 1911 was the largest interurban electric railway passenger service in the world, with over 1,000 miles of track. However, it did not survive because of state's powerlessness to protect it and because of the nascent car industry that bought up the privately-owned streetcars and closed them down.¹⁹ This example reveals the dependency of a public transport service on political and public support to protect it against market powers.

The lack of governmental protection sealed the fate of public transport in LA and in this way affected the city's urban design. Throughout history, however, there are many examples of states exercising control over their urban spaces by conferring a function and design on them that suits them best. For example, the city planner, Baron Hausman, commissioned by Napoleon III, built large boulevards in Paris that facilitated the quick movement of troops and the suppression of revolutionaries. Another good example of an

urban space having been designed with a specific ideological agenda is the Moscow metro system, often referred to as the people's palaces. The Moscow stations were built during Stalin's rule and designed in such a way as to display Soviet strength and glorify socialism. The architects in charge were given the order to create a space that made people forget they were underground, which explains the importance attached to lighting and spaciousness.²⁰



Moscow metro

Although the power of the democratic nation-states to determine the design of its urban spaces, in an all-decisive way, may have been reduced today, the role of governments – whether local or national – in determining the form of the urban landscape remains crucial. As illustrated above, the form of the urban landscape is strongly affected by the way mobility is conceptualised. A good example of a local politician who understood this to the full is Catherine Trautmann, former mayor of Strasbourg (1989-2001). She introduced a light-rail system in the city and in funding the project, made sure that 50 % went to the embellishment of the streets through which the line would run. Grassed tracks, the planting of 1,700 trees and the rebuilding of a major city square were all part of the upgrading of the urban environment. Her idea of mobility consisted in reducing car mobility by banning through-traffic from the city centre and improving public transport.

The former examples show that urban planning and urban design and development is about giving order to space and giving form to society.²¹ It also shows that mobility is intertwined with urban development and, to a large degree, dependent on political decision-making.



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4.2. Rendering space functional and disciplining the user

However, urban design and planning is not only about politics, it is also about rendering public space functional and disciplining the user with a view to his or her safety. The following illustration clearly illustrates how this was done in terms of car mobility by creating zebra crossings:



Figure 1: The process of channelling pedestrian movements. In Chur in 1939 (left), pedestrians walk freely; in Interlaken in 1953 (right), they are limited to certain paths (Source: Binder/Heller 1997, photos: bfu)²²

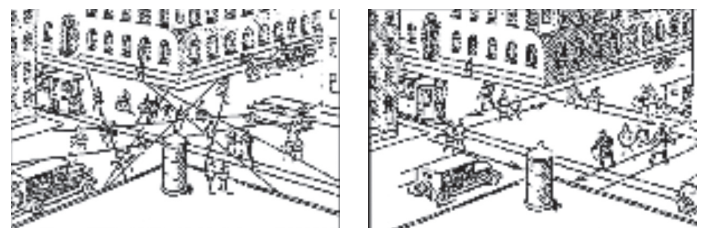


Figure 2: Traffic education in 1930: disciplining the body (Source: St. Galler Verkehrsbuchlein in Haettenschwiler, 1990)

In a different but similar way, metro stations also impose a certain behaviour on their users. Through the high degree of instrumentality, the user is as it were conditioned or socialised to use the space in a specific way.

4.3. Marking boundaries and cultural politics

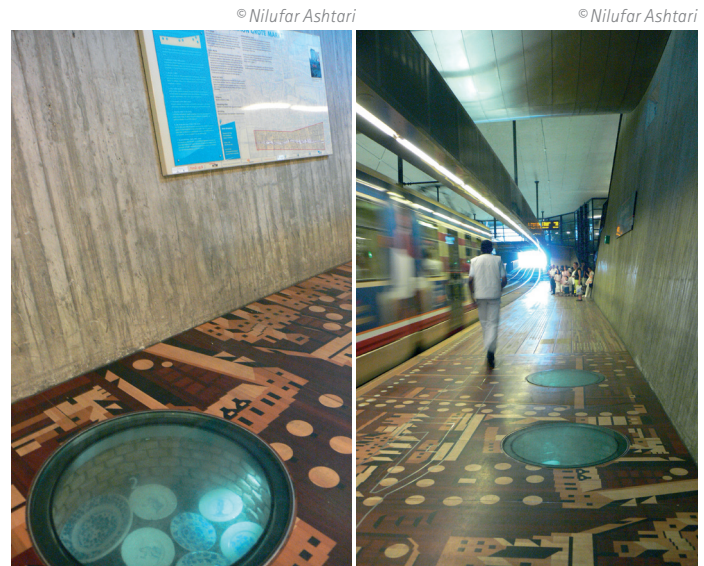
It has often been assumed that space is empty and can be ordered and developed. But the idea that space is empty is false. Place is a critique of space and as a site of local identity, should be taken into account by planners and designers. This is not always easy as what is local in our present-day cities has been affected by the global and as a process is constantly being redefined.

For example, take the redesign of a metro station in the city of Oslo, Norway. The station is located near the Munch museum in a neighbourhood dominated by council flats primarily occupied by immigrants. It is thus used by tourists and locals alike. In redesigning the station, one could therefore think of integrating elements that refer to the identity of what lies above ground. But a problem arises when we have to choose between national pride – the Munch identity – and the new identity of the underprivileged residents in the council flats. The tension could be resolved by merging the two, and by involving the local community in the decision-making process. However, this is more easily said than done. It also assumes that the underprivileged residents identify with a different set of elements from the tourists and the autochthon population, while it could very well be that the latter also finds pride in the national dominant culture that promotes the work of Munch. Furthermore, pride could also be found in the fact that Munch has become part of the dominant global culture through which their neighbourhood has come to occupy a central place in the world of art.

The example clearly illustrates that in the end, urban planning and design decisions are always about marking boundaries and cultural politics. So if one wants to take into account the local identity of a place before (re)designing a station, there are a number of factors one has to be aware of:

- (1) identity is about image: it is defined in relation to ourselves (us) and the others (them);
- (2) identity is a process: it is in a constant flux and has no fixed essence or authenticity;
- (3) identity is affected by different cultures; national, local, global, consumerist, capitalist/corporate, television, etc;
- (4) identity is constructed: it serves political, cultural, religious, social, commercial/corporate, national, aesthetic, and other goals;
- (5) identity is about history: it is about continuity, sharing the same values, binding and proximity.

The fact that there are as many identities as there are cultures, nations, religions, fashions and people, does not facilitate the task of the designer, whose identity will also leave a mark. Furthermore, design is bound by a whole set of parameters – budget, political affiliation, security provisions, etc. – that will also have an impact on design decisions and creativity.



Thoughtful design, however, is a dialogue between different parties and ideas. It is a marriage of form and function, culture and politics, art and control. When an urban space is designed in a thoughtful way and the identities of the place that is being developed are taken into account, a sense of belonging, history and continuity can be obtained, adding to the sensation of familiarity and security.

The tram tunnel in The Hague, whose chief designer was Rem Koolhaas, is an example of thoughtful design. It successfully connects with its location by integrating historical references, including artefacts displayed behind glass windows. Furthermore, one of the tram stations has parquet floors that blend perfectly with a pedestrian passage in hardwood, right above the station's main entrance. However, some passengers criticise the fact that the tram tunnel's three underground stations are practically identical, thus creating confusion and making it difficult for people to find their way. While Koolhaas may not be as "generic" as he claims, his design might still be too generic to be entirely functional.



4.4. Public transport, an important planning instrument

As we have seen, governments – whether local or national – play an important role in shaping the identity of the urban landscape. This is achieved by the way they view mobility and by the mobility modes (individual or public transport) they encourage through their planning initiatives, which is done mainly in the field of infrastructure. In today's society, urban development increasingly escapes the constraints of planning and has begun to lead a life of its own. Governments' lack of integral vision on mobility has supported individual transport and indiscriminate economic growth for too long. Consequently, through large-scale decentralisation processes, the urban population and activities have been redistributed. This has resulted in the creation of mono-functional and mono-cultural spaces, leading to the creative destruction of the city's diversity, capacities, capital and spaces.

The collective nature of public transport requires a dense flow of travellers for its existence to be maintained; at the same time, it enables large and diverse quantities of people in the public realm to be assembled together. This actually provides local and national governments with an instrument to reverse many of today's spatial and social problems. The “disadvantage” of public transport, i.e. its inability to provide individual routes in dispersed areas, becomes a tool to create and guide flows and activities. Stations and other nodes in the public transport network have the capacity to become centres of development, and deserted spaces can again be filled with flows of passengers.

1. it stimulates and guides urban development;
2. it improves quality of life (it saves energy and reduces pollution, stress, road rage);
3. it encourages accessibility;
4. it plays an important part in an integrated intermodal transport network;
5. it can solve the problems of segregation, dispersal and periphery by connecting areas and public spaces;
6. it adds to the public perception of safety, acting as the eyes and ears on the street.

We can conclude that successful and safe urban transport systems start with strong political support, proper planning and a strategic vision for the city and the role of public transport in it. A study in 1999 compared public transport policies in best practice cities such as Helsinki and Bologna to worst practice cities such as Athens and Dublin. It concluded that best practice cities had (1) strong local governments, (2) a common vision of the city, and (3) an urban coalition of different interest groups.²³

5. Non-place versus heterotopia: safety in perspective

5.1. A clear vision for the city and public transport

We have looked at the construction of urban space in general and the ideas and modes of mobility behind it. It was illustrated mobility impacts on the built environment and in turn affects people's perception; including their feelings of security and insecurity.

People are likely to feel insecure in a mono-functional, mono-cultural urban environment that has been “de-humanised”, as it were, by highways and ring roads, and characterised by tall buildings used for economic and bureaucratic activities only. On the other hand, an attractive, pleasant square with benches, trees and diverse economic and cultural activities, as well as a high human flow, is likely to be experienced in a safe way.

Let's imagine now that both places contain a metro station. The public perception of the built environment above ground will not be very different from the public perception of the built environment underground. In the case of the first example, the public perception of insecurity will probably be exacerbated. Therefore, how can we improve the public's perception by redesigning this metro station? The answer is simple: we cannot entirely if we do not tackle the “problems” above ground at the same time. This requires the co-operation of the local authorities, or some other entity, with the public transport operator and, above all, a clear and coherent vision for the city and the role of public transport in it.



*Le kiosque des Noctambules
© Martijn Vogelzang, Paris*

5.2. The interchange station, a heterotopia

This vision should consist of an integrated urban design policy that involves defining and consequently turning public transport nodes into “heterotopias.” Though Foucault introduced the concept of heterotopia as a kind of counter-place to utopia, it is Maarten Hajer’s use of the term in relation to public transport that is of interest to us here. As he defines it: “Heterotopias are places that communicate an open atmosphere through which different groups are not seen as threatening.”²⁴ It is a place where social and cultural mobility occurs and where the insecurities of urban life can be countered by what has been called “Orientierungswissen”, orientation knowledge.²⁵ This knowledge is created through contact and confrontation between different social and cultural groups, and angst and insecurity is reduced. As Lyn Lofland writes: “To live in a city is, among many other things, to live surrounded by large numbers of persons whom one does not know. To experience the city is, among many other things, to experience anonymity. To cope with the city is, among many other things, to cope with strangers.”²⁶ A heterotopia allows us to see others in a positive light. It teaches us to observe and place others. In a socially unsafe environment, on the other hand, stereotypes will thrive, as they are an efficient way to simplify a complex and threatening social environment.

Heterotopia is the spatial expression of a social project and the answer to the necessity of having spatial ordering serve social integration.²⁷ Hajer cites as examples the London underground, the Tivoli Gardens in Copenhagen and the Albert Cuyp market in Amsterdam. Heterotopia is the opposite of Patrick McKenzie’s “privatopia”, gated towns and areas that have reinvented the street, the square and the pedestrian.²⁸ In opposition to the ideal type of interchange station as a heterotopia is the “non-place”, defined by Augé as having no history, identity and no urban relationships. Imagining the interchange station as a heterotopia instead of defining it as a non-place, as Augé does, leads us to view public transport in an entirely new way, namely as the “cultural backbone of society”. This however requires the reinvention of interchange stations.²⁹



Casa de Musica - Porto

5.3. Heterotopia is multi-functional

Heterotopia should not only serve a functional transfer purpose, it should also be treated as an independent cultural place and a public place in its own right. It could further fulfil commercial functions. However, it is important that those involved in the design process of the interchange station view functional purposes in community terms and not in commercial terms only. There is a risk, when the public space of the interchange station is privatised, that its users are treated as customers instead of citizens and that public values and basic social relationships are reconfig-

ured.³⁰ “The recent discovery of the interchange station as a hole in the market by big international chains such as the Free Record Shop, the Rack and Pizza Hut run counter to the idea of the interchange station as a heterotopia.”³¹

Hajer mentions the S-Bahn station Steinebach in the Munich area as a good example of a multi-functional interchange station, containing a cultural centre, a café and a restaurant instead of a snack bar. In France, the renaissance of public transport has been accompanied by many examples

of multi-functional interchange stations. The intermodal interchange station at La Défense, for instance, houses a shopping arcade, a café, multiple public services such as a post office, a national health and insurance service and a business centre.³² Another original example is Place Pirmil in Nantes, which is a riverside bus station that doubles as a vegetable market during the day. Its location further renders the site atmospheric and reinforces it as a landmark.³³

The major transit authority responsible for public transportation in Paris and its environs, the RATP (Régie Autonome des Transports Parisiens), expresses the idea behind creating multi-functional interchange stations very well. The RATP sees itself as an urban service provider that wishes to promote services that go well with transport. It aims to transform “transport time” into “social time”.³⁴ Through its design policies on the one hand and the programming of cultural events in stations on the other, it further defines itself as a major urban and cultural actor. It truly regards the promotion of culture in the city as a social and urban mission and argues that the transport universe should not only be economical and functional, but also integrate elements of emotion, image and ecology.³⁵

“Public transport as a site for cultural activity” contributes to the local economy and the development of cultural industries, besides boosting the public’s perception and image of the public transport operator.³⁶ Besides Paris, there are other more progressive cities that adhere to this philosophy. For example, in the metro stations of Sao Paulo, Brazil, a Cultural Action Programme schedules cultural activities on a monthly basis, from thematic exhibitions to musical and theatre performances.³⁷ One such exhibition even attracted more than 200,000 visitors.³⁸

The Platform for Art initiative in London is another way in which the operator acts as a cultural agent and confirms the city’s cultural identity. The initiative makes use of redundant spaces throughout the network to exhibit art reproductions in metal frames. It hosts several exhibitions a year and even has its own website. “A key aim for Platform for Art is to be recognised as playing an active and vital part in that cultural provision; reflecting below ground what London has to offer as a world class city above ground.”³⁹

5.4. Heterotopia is about atmosphere

Atmosphere is especially created through lighting. Here, the choice materials plays an equally important role. Rem Koolhaas’ tram tunnel in The Hague illustrates this well. The lighting is subdued and the parquet used for the platform creates a feeling of luxury, homeliness and warmth. As Landry and Bianchini argue: “We need less creativity from the engineers and more creativity from those who under-

stand how to generate atmosphere, liveliness or a sense of security.”⁴⁰

The RATP especially takes lighting seriously. When designing an interchange station, their design team, which includes an architect, lighting technician and electrician, studies the quality and performance of light very carefully before contacting the suppliers.⁴¹



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The Hague
© Nilufar Ashtari

5.5. Heterotopia is about identity

It is important that “the identity” of the interchange station is well integrated into the urban area where it is situated and that identification points are created. Ideally, a sense of identification is created between people, the city and the interchange station. By creating a sense of identification and stimulating people’s sense of ownership, people take pride in their surroundings, take more care of them and may stand up to defend them. Vandalism and graffiti may even be discouraged.

Art initiatives are always a good way to achieve this. The London underground for example made over 80 disused poster frames available at one station to display the work of students at a local school. It thus aimed to reflect the diversity of London and its communities as well as creating a sense of ownership.⁴² Another good example is the artwork called “Tagtile” that was commissioned by Nexus, the Passenger Transport Executive of the Tyne and Wear metro (North East of England). For this piece of work, the artist approached youngsters at a nearby housing estate. He set up a “tag kiosk” in the local station where they could leave tags. These were then incorporated into coloured tiles that were subsequently applied to the wall of the footbridge leading to the station.⁴³

Identification points are important because of the overdose of stimuli the city offers.

Kevin Lynch, in his famous work *Image of the City* (1960), described what people found important in the built environ-

ment of the city. He revealed that people created a mental map of the city, based on five recurring elements. He identified these to be:

- (1) districts
- (2) paths
- (3) edges
- (4) nodes
- (5) landmarks

Paths are the tracks, roads, streets, etc., which people take to move around in a city. Examples of edges include walls and seashores; they provide borders. Nodes are important intersections, road junctions and public squares, containing a concentration of city features. Districts are sections of the city that are usually large and easy to identify, and landmarks are objects that act as reference points and give a sense of location such as the Eiffel Tower, a mountain, or some very unique building. Lynch concluded that people had a problem finding their way in cities containing “confusions, floating points, weak boundaries, isolations, ambiguities and lack of character and differentiation”. On the other hand, people showed no problems in find their way or feelings of insecurity in places with distinct features and a strong identity. The problems passengers had, in terms of finding their way, with Koolhaas’ tram tunnel in The Hague, clearly illustrates the importance of “identity” for the interchange station.

In Paris, such confusions are solved by the personalisation of each interchange station. Nevertheless, coherence in design is maintained through fixtures such as bins and telephones, which are applied consistently according to strict rules throughout the network.⁴⁴

5.6. Room for play and chaos

When (re)designing an interchange station, we have to be careful not to sanitise the space by applying all the available security strategies. As the criminologist Rob White writes:

*Much is said about the fear of crime and victimisation associated with public incivilities, crime and homelessness. However, little is said about how the appearance of some degree of “social disorganisation” is itself a source of pleasure. Indeed, the contrast between highly sanitised, extensively regulated spaces (as in some shopping complexes) and less pristine urban environments with less overt social controls makes the latter a desirable place to visit for many people, at least on an occasional basis.*⁴⁵

In trying to create an “authentic” urban space that takes into account the identities of the place and its residents, we should be aware that our idea of what constitutes the “community” might be outdated. Given that social networks

increasingly transcend territoriality – especially today in our virtual age – it may be difficult to capture a community’s “spirit” and express this through design.

We should not attempt to create too much “local” meaning and identity. It is important to “personalise” the urban space and break with its anonymity. But we should also realise that anonymity encompasses a sense of freedom and safety and that it has always constituted an attractive feature of the city. Public space should create an anonymous culture that fosters values such as tolerance, hospitality, politeness and respect for others; a morality of distance as opposed to demands for authenticity.⁴⁶

Crime prevention should not become our religion. A public space is an unsafe space if the eye of repression is the only eye. This can be exploited by figures of authority and lead to authoritarianism.⁴⁷ A social framework is needed for effective self-policing; too much control over public spaces through urban planning and design is negative. There should be room for play and chaos.

Conclusion

In the preceding chapter we went in search of “the spirit of place” of the interchange station. We invited designers, architects, urban planners, operators and decision-makers, to approach the design of interchange stations in a reflexive and creative way. Consequently, we revealed how different modes and ideas of mobility have shaped the urban environment throughout history. This, we argued, allowed for a better understanding into the ways design decisions affect our surroundings. We further examined how mobility had an impact on the urban environment and in doing so, affected social reality. It was argued that public transport, as an alternative to car dependency, fostered social inclusion and cohesion and reduced societal “angst.” Here, the link was made between public transport and the city, and the public space above ground and the interchange underground.

We also explained how social inclusion and cohesion must involve the right to public transport, which is an integral part of urban citizenship. We saw how the right to public transport led to the obligation of appropriate behaviour towards others in urban spaces. And this brought us to the fourth section: mobility and power. How can civil behaviour be enforced through design? We showed that through urban planning and design, control can be exercised and the user disciplined into using the urban space in the intended way. We further illustrated that urban planning and design involve giving order and giving form to society, as well as marking boundaries and identity politics. It was emphasised more than once that successful and safe public transport begins with strong political support and a clear vision for the city and the role of public transport in it. In the final analysis, we put safety into perspective by defining the interchange station as a heterotopia that creates “orientation knowledge” and reduces angst and insecurity. Ideally, the interchange station ought to be multi-functional, atmospheric, and have a distinct identity that is rooted both in its “locality” and in anonymity. While the final message of this chapter is asking the designer to fuse the local and the global into the “glocal”, it is also asking him or her to provide room for play and chaos.

Footnotes

- ¹ Augé, Marc, *Un Ethnologue dans le Métro*, Hachette, Paris, 1986. *Non-lieux : introduction à une anthropologie de la surmodernité*, Le Seuil, Paris, 1992.
- ² Koolhaas, Rem, *The Generic City*, in S, M, L, XL, New York: The Monacelli Press, 1996.
- ³ International Seminar, Cultures and security, three subjects: racism, immigration, youths in group, Lisbon, October 8-10, 2001. www.igai.pt/publicdocs/Intervencoes_Seminario2001_Eng.pdf
- ⁴ Washikar, Shridhar K. *The Phenomenon of Urban Mobility and environment of Urban Public Spaces*, research paper presented at the 8th International Asian Planning Schools Association Congress, 2005
- ⁵ In the second phase of this research project, we will be measuring people's perceptions in interchange stations so that designers can take this information into account.
- ⁶ Concerning social interaction with the built environment, see Chapter 2.
- ⁷ Washikar, Shridhar K., 2005, p.12.
- ⁸ Boelens, Luuk, *Het Mobi-type; naar een archeologie van de space of flows*, in S&RO, No. 1, 2002.
- ⁹ Bromley, Ray, www.arch.mcgill.ca/prof/sijpkas/arch528/fall2001/lecture12/soria.html
- ¹⁰ Wickham, James, 2004.
- ¹¹ White, Rob, *Public Spaces and Community Crime Prevention*, paper presented at the conference *Safer Communities: Strategic Directions in Urban Planning*, convened jointly by the Australian Institute of Criminology and the Victorian Community Council Against Violence, held in Melbourne, 10-11 September 1998.
- ¹² White, Rob, 1998.
- ¹³ Wickham, James and Lohan, Maria, *The Social Shaping of European Urban Car Systems*, Project SceneSusTech, Scenarios for a Sustainable Society: Car Transport Systems and the Sociology of Embedded Technologies, 1999, p. 6.
- ¹⁴ For an excellent analysis on these changes, see Maarten Hajer and Sven Kesselring, *Democracy in a Risk Society? Learning from the New Politics of Mobility in Munich*, in *Environmental Politics*, 1999, No. 3, pp.1-23.
- ¹⁵ Wickham, James, *Public Transport and Urban Citizenship*, 2004.
- ¹⁶ Wickham, James, 2004, p. 32.
- ¹⁷ Wickham, James, 2004, p. 17.
- ¹⁸ Wickham, James, 2004, p. 18.
- ¹⁹ Wickham, James and Lohan, Maria, 1999.
- ²⁰ Bennett, David, *Metro, The Story of the Underground Railway*, 2004.
- ²¹ Hajer, Maarten, *Heterotopia Nederland of wat Bunnik mist, een cultureel politieke visie op de ruimtelijke ordening*, in *De Toekomst van de Ruimte, vier essays voor Nederland 2030*, Rijksplanologische Dienst, Ministerie van VROM, 1996, p. 80.
- ²² Sauter, Daniel, *Freedom to Walk – Walk to Freedom, Reflections on Walking Democracy and the Redistribution of Time and Public Space*, www.americawalks.org/PDF_PAPE/Sauter.pdf
- ²³ Wickham, James, 2004.
- ²⁴ Hajer, Maarten, 1996, p. 92.
- ²⁵ Hajer, Maarten, 1996.
- ²⁶ Lofland, Lyn, *A World of Strangers – Order and Action in Urban Public Space*, Free Press, New York, 1973, p.ix-x. Quoted in Hajer, Maarten, 1996, p. 83.
- ²⁷ Hajer, Maarten, 1996, p. 92.
- ²⁸ Hajer, Maarten, 1996, p. 92. McKenzie, Patrick, *Privatopia*, Yale UP, London, 1995.
- ²⁹ Hajer, Maarten, 1996, p. 94.
- ³⁰ White, Rob, 1998.
- ³¹ Hajer, Maarten, 1996, p. 96.
- ³² Amar, Georges, *La Défense, Coeur transport multimodal*, in *RATP Savoir-Faire*, No. 37, 2001.
- ³³ Vogelzang, Martijn, *First Class for Everybody*, in *UITP Public Transport International*, 01/2003, p.11.
- ³⁴ Laferrère, Dominique, *Les complexes d'échanges urbains*, in *RATP Savoir-Faire*, No. 37, 2001, p. 13.
- ³⁵ Kaminagai, Yo, *Une Stratégie pour le Sensible*, in *RATP Savoir-Faire*, No. 37, 2001.
- ³⁶ *Art on Transport*, UITP Design and Culture Group fact sheet, March 2003.
- ³⁷ *Public Transport Theatres of Culture*, fact sheet prepared by the UITP Design and Culture Platform and with the kind assistance of the Sao Paulo Metro, Brazil, March 2003.
- ³⁸ Ibid.
- ³⁹ Damon, Nadia and Dillon, Tamsin, *Platform for Art*, in *UITP Public Transport International*, 1/2003. p. 41.
- ⁴⁰ Quoted in Maarten Hajer, 1996, p. 87. Charles Landry and Franco Bianchini, *The creative city*, Demos, London, 1995.
- ⁴¹ Voile, Florence, *An Underground Facelift, The "Renouveau du metro" Project: Modern, Dynamic, Ambitious*, in *UITP Public Transport International*, 1/2003, p. 22.
- ⁴² Damon, Nadia and Dillon, Tamsin, *Platform for Art*, in *UITP Public Transport International*, 1/2003. p. 41.
- ⁴³ Meagher, John and Sykes, Alan, *Moving the Boundaries of Art*, in *UITP Public Transport International*, 1/2003, p. 37.
- ⁴⁴ Voile, Florence, *An Underground Facelift, The "Renouveau du metro" Project: Modern, Dynamic, Ambitious*, in *UITP Public Transport International*, 1/2003, p. 21.
- ⁴⁵ White, Rob, 1998, p. 7.
- ⁴⁶ Raes, Koen, *Citizenship, Public Culture and Insecurity. A Plea for the Revaluation of Public Space*, *Ethical Perspectives* 2 (1995) 3, p. 217.
- ⁴⁷ Raes, Koen, 1995, p. 217.



CHAPTER 2.

Theoretical underpinnings of the sociological research



1. Introduction: Challenging the Notion of Fear of Crime

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Since the beginning of research on fear of crime, about thirty years ago, the topic has evolved a lot. Notwithstanding the former, the main presumption practically remained the same; fear of crime was seen as the outcome of the real fear of the individual to become a victim of a criminal act or a delinquency. It is only recently that researchers have come to acknowledge that fear is broader and subtler than fear of crime alone.¹

In the next part, we will briefly outline each of the four dimensions.

For more than thirty years research into fear of crime has been conducted, but it is only in recent years that it received more attention. This has led to a much better understanding of the subject matter. Several literature and research reviews have outlined the main focus points in fear of crime research.² Because of the large amount of research that has been undertaken in several countries, mostly Anglo-Saxon, the topic has become very vast and complex to overlook. Criminologist Chris Hale (1996) has tried to make an inventory of the abundance of information, surveys and research available.³

He discerns four dimensions in the *research* on fear of crime:

1. The dimension of vulnerability
2. The victimization dimension
3. The dimension of the physical and social environment
4. The social psychological dimension

1.1. Vulnerability

It is striking to see that in fear of crime research certain groups always seem to experience a higher sense of insecurity. This can be traced back to a higher degree of vulnerability, either socially and/ or physically. Vulnerability in this sense is the consequence of an interplay between three factors: (1) the chance of victimization, (2) the severity of the anticipated consequences and (3) the amount of control over the former two factors.

The variables to operationalize vulnerability are myriad, but the two most important and recurrent variables are age and *gender*. Concerning gender and vulnerability, we see that women are physically more vulnerable, as their physical strength for possible defense often is no match for men. Socially, women's vulnerability manifests itself in the "fear of rape", or more generally in the "general fear of men".

The link between *age* and vulnerability is somewhat comparable. The older people get, the more they seem to become afraid. In large part this is because of their reduced physical abilities and strength. In most surveys they are among the highest rates of fear of crime. As it holds true for older men and women, older women tend to score the highest. This

is remarkable, as it is a category that is objectively and relatively safer.

Here we can point to the paradoxical character that often occurs in fear of crime research: people who are objectively more secure feel subjectively less secure. The reason for this paradox – at least in the case of vulnerability – seems to be twofold. On the one hand, victim surveys might not be fully apt to understand and measure the full extent of victimization among women and the elderly. On the other hand, the higher degree of insecurity measured could be influenced by the higher personal perception of personal vulnerability within the stated categories.

Besides gender and age, there are two other categories that are frequently mentioned in the research, namely ethnicity and socio-economical status (mostly measured through income and schooling level). Ethnic minorities show a higher sense of insecurity in research, although this changes as soon as other variables are added. The same holds true for socio-economical status: usually there seems to be a negative correlation between income and fear of crime. The lower the income, the greater the fear. Nevertheless, these results are not unequivocal.

1.2. Victimization

In this dimension, research is concerned with the former victimization of the respondents. Victimization is usually divided in direct and indirect victimization. Direct victimization then means that the respondent in question has been a victim of a delinquency him- or herself. Indirect victimization can have more potential sources. Either the respondent has witnessed an incident, or he or she has a significant other (like family or friends) who has been a victim. The respondent may also have seen or heard something in the media about victims of crime.

Some researchers found that victimization – either direct or indirect – heightens the fear of crime. When people were themselves a victim, they tend to remember this rather sharply and fear becoming a victim again. The same happens – though to a lesser degree – with indirect victimization. Although people were no victims themselves, through identification with the victims they have increased concerns about their personal safety.

It seems then quite logical and acceptable to conclude that victimization has a positive correlation with fear of crime. However, there is research that indicates the contrary.⁴ One explanation given is that former victimization can 'strengthen' people. By having been a victim before people feel they have 'overcome' their fear and so have less fear of becoming a victim again.



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1.3. Physical and social environment

Because fear of crime did not seem to be entirely dependent on direct or physical experiences, researchers began to look into more contextual variables, such as architectural aspects, the degree of urbanity or the organization of community life.⁵ In other words emphasis shifted to the physical and social environment as factors or variables inducing fear of crime.

Although results vary, there is one constant in this research dimension: the fear of crime in urban areas is consistently reported to be higher than in more rural areas. This is not wholly illogical and seems fairly rational. It is a fact that the chance or probability is statistically higher to become a victim of crime in the city.

A second strand that deserves our attention here is the research that focuses on the interplay of the built environment and fear of crime. A milestone in the literature covering this aspect is the Broken Windows theory of Wilson and Kelling (1982).⁶ The theory states that when a place deteri-

orates physically, it will become inductive to crime. So when there is one graffiti on a wall, soon there will be dozens. Since people tend to feel more insecure when there are signs of chaos and disorder (making them think that the place is not under control or managed), the deterioration of a place ought to be fought immediately. So keeping the place neat and orderly makes people feel more secure, and prevents accelerated deterioration.

However important in its own right, the Broken Windows theory is but one emanation of the physical and social environment paradigm. In general it can be stated that the role of the physical environment cannot be isolated from the role of the social environment. As it is true that the architectural structure facilitates crime or the fear of crime, it isn't the sole culprit. The architectural structure does not determine the urban context. Rather it is this structure in combination with the specific character of ephemeral, transitory and fragmentary contacts with strangers that leads to uncertainty and feelings of isolation and insecurity.

1.4. Social psychological factors

The research in this dimension deals with even more contextual variables, compared to the former issues we discussed. It makes use of so-called constructs. Constructs are abstract notions like anomy, alienation, authoritarianism or pessimism that cannot be operationalized through one variable. Instead they are “constructed” through the composition of several variables. The constructs are then put into ‘models’ to explain fear of crime through a broader and larger set of potentially explaining factors.

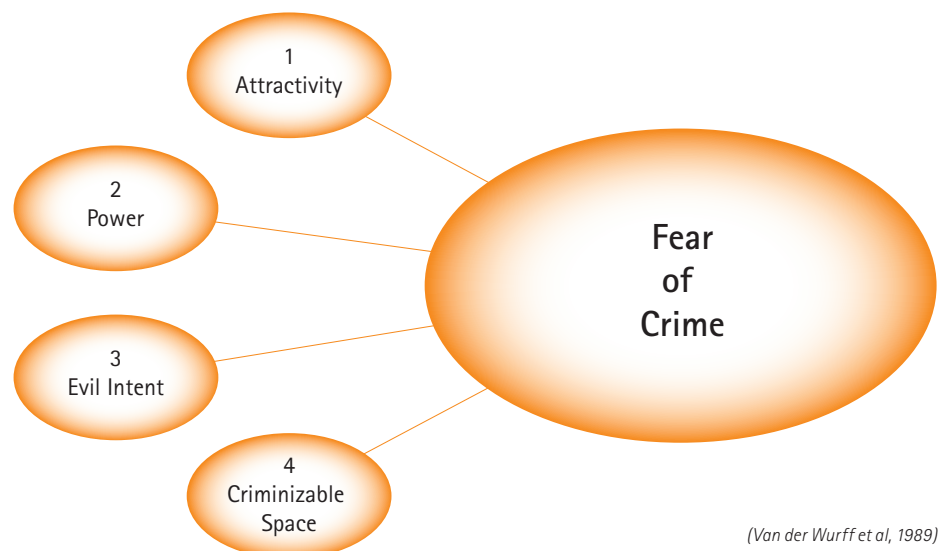
As those social psychological models offer a vaster explanation of fear of crime, some researchers argue that it offers perspectives for the future of fear of crime research.⁷ To give an idea of such a social psychological model, we will look at the model proposed by Van der Wurff et al:⁸



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(Van der Wurff et al, 1989)

In this model fear of crime is composed of four factors: (1) the attractivity factor, (2) the power factor, (3) the evil intent factor and (4) the factor of criminizable space. In short the factors can be explained as:

(1) The Attractivity factor is intended to refer to the extent to which people see themselves or their possessions as an attractive target or victim for criminal activities.

(2) The Evil Intent factor relates to the wrongdoer's role in the phenomenon. It is represented by the extent to which a person attributes criminal intentions to another individual or to a particular group.

(3) The Power factor refers to the degree of self-assurance and feeling of control that a person has with respect to possible threat or assault by someone else. In principle, it is a question of two related sub-factors: one's own power and the power of the other.

(4) Criminizable Space is the fourth and final factor. This last factor has to do with the situation in which crime may take place. The emphasis is on the characteristics of the moment in time, place and on the presence of others. It is a question of the extent to which a situation lends itself to criminal activities in the eyes of a possible victim – of how much the situation facilitates crime or the criminal.⁹

This model then can serve as an example of the social psychological research dimension. This dimension is said to be the most recent of the four proposed research dimensions. What is remarkable, is that it becomes difficult to discern the former three dimensions from the latter. In a way, the social psychological model incorporates the other dimensions. In other words, there has been a *shift* in the explanation of fear of crime, namely an *enlargement*.

The shift in attention and explanation of fear of crime in turn opened the door for the sociological explanation. It is to the latter that we shall turn now.



2. Fear of Crime: a Sociological Perspective

One of the main problems in the research on fear of crime is that it is wrongfully reduced to “the concrete fear to become a victim of an offence”.¹⁰ The problem of insecurity, however, is broader than that. It is a societal problem. The basis of the problem lies in the changing sociological context. There are no certainties left. In the so-called “risk society” certainties disappear, and the individual has the freedom to fill in his or her own life. The reverse side of the medal implies uncertainty.¹¹ And uncertainty becomes the big evildoer from the highest to the lowest level of society.



2.1. Different levels of uncertainty

The sociologist Zygmunt Bauman elaborated the concept of uncertainty. In accordance to different societal levels – from macroscopic to microscopic level – he talks about: Insecurity/ Security, Uncertainty/ Certainty, Unsafety/ Safety.¹² The reason for explaining these concepts lies not so much in the fact of offering a full and comprehensive explanation, but rather to make clear how the different societal processes, of varying scopes, are closely interrelated.

The couple **security/ insecurity** is attended with the precarity of social status. The place one has in society isn't fixed anymore. Social mobility is still very possible, but the mobility happens to be more in a downward sense, rather than upward. The governments of the nation states are also under enormous pressure, as their social systems – especially in the welfare states – become outdated and lose the fight against an ever more deregulated and massive globalization. Insecurity in this sense of the word thus means precarity on the highest of levels.

The couple **certainty/ uncertainty** is attended with the impossibility of anticipation. This is due to the spread of scientific knowledge and the decline of authority. Whereas the democratization of knowledge is a good thing, it also democratizes the so-called scientific doubt. This means that lay people are bombarded with expert knowledge, which they cannot process and which contradicts itself half of the time. The use of sun-tan lotion for instance, is considered to reduce the chance of skin cancer, but at the same time sun-tan lotion contains elements that could evoke other kinds of cancer.

Furthermore, the expansion of expert solutions generates more questions, as the techniques used almost always have side effects in a different field. Secondly, there is the decline of authority. As we noted above, governments tend to lose their control over international processes. Promises of emancipation made by state institutions seem to fail, and as a consequence their authority loses its legitimacy. Critique becomes omnipresent, and there is a constant trade-off between authoritarianism and negotiation. This can result in a belief that there are no legitimate rule-setting agencies left. And if there are no rule-setting agencies left, people are free to choose the rules they want to adhere to.

The third couple is that of **safety/ un-safety**, and has to do with the integrity of the body and its extensions. In short we can put that the process of privatization of death in contemporary Western society results in a fixation on life. Death is seen as a defeat, and loses its transcendental character. In this way life and the integrity of that temporal vessel – the body – become extremely important for people nowadays. The integrity of the body attains a quasi-holy credo.

Although this tripartite seems quite abstract, the consequences for our daily lives are very tangible. Especially regarding the second level – that of the impossibility of anticipation. As we saw earlier, fear of crime is broader and subtler than the fear of crime alone.

There where we discussed the abstract processes earlier, we will now turn to the concrete consequences of the impact of uncertainty. To make this clearer, we will contrast present day “problems” with historical accounts of the link between the stranger, the built environment and social interaction.



2.2. A Historical Reading

2.2.1. The former status of the stranger

In pre-modern times the stranger had a fairly unambiguous status. Villages were rather homogeneous, and when a stranger arrived, he arrived in one of three forms: as a guest, as an enemy or as a so-called neighbour-to-be. As a temporary guest, the stranger posed no danger to the existing order; he was no threat. So he could reside for a while in the form of a stranger as a guest. The stranger, as an enemy, on the contrary, did pose a threat to the existing social order, and would be liquidated without any form of trial. As a neighbour-to-be the stranger could not stay a stranger, which meant that he had to adopt the local customs. In other words he would have had to become one of the villagers. This adaptation was needed, because of the very tight structure of values and norms, of customs and rituals. There were norms and values for every single occasion. The symmetry and complementarity of the perceptions of the right mode of conduct was sincere, self-reinforcing and renewed it self spontaneously. As Bauman states : "Societies, which offered such a life-world, could do without professional teachers of behaviour in public, and without the police."¹³

2.2.2.

The former role of civilities for social interaction

With the coming of the modern city, a certain ambiguity arose. The stranger became omnipresent and the interpersonal traffic became a source of incongruity and ambiguity. Trust was no longer a question of knowing the other personally, but had to be regulated. When crossing the city, the stranger was reduced into anonymity. "Social intercourse became a meeting that was not quite a meeting; a meeting

pretending not to be one, one could say it became a mis-meeting. To live with strangers then, one had to master the art of mismeeting."¹⁴

The mismeeting is one aspect of the many rituals and civilities that codified meeting in public. And so civilities were constituted in routines that stratified and stabilized social interaction. They led to situations that could be anticipated.

2.2.3. The built environment and social interaction

In this civilisation process place played an important role. And this for two main reasons. First, demeanour became dependent of the place where it occurred. There were different sets of rules for different sets of places. For instance, behaviour in public places adhered to another register than behaviour in private places. This was also facilitated by the fact that public and private space at the time were strictly segregated. Secondly, places were constructed in such a way that they either facilitated or segregated interaction. In the private sphere we can think of separate bedrooms and separate toilets instead of using the streets. In the public sphere one could think of parks, train stations and arcades. "Rather unintentionally, in the process of development of the urban organization of space as a setting for mismeetings, the cause and effect reinforced each other to the point of becoming difficult to separate. In the end one became unthinkable without the other."¹⁵ So the built environment foresaw the structure of interactions, but at the same time it became dependent on it. In other words, the social and built environment became intertwined once again.



2.3. R(a)ising 'problems': the Present-day Context

Problems rise, then, with the transition to the present-day context and society. There are four main processes – all of which related to the processes and changes already mentioned – that lead to the well known “problematic status” of the public realm:

1. The problem of multiple anonymous contacts
2. The problem of definition of place
3. The problem of “de-publication” of the public domain
4. The problem of ushers of the public realm

2.3.1. The problem of multiple anonymous contacts

Firstly, there are the multiple anonymous contacts. This gives rise to a generalising of strangeness. The present-day situation of living with strangers is quite more complex than it used to be. And this for several reasons. One of them being the difficulty of typification. When people meet other people – strangers and acquaintances alike – they tend to typify or classify them. This is ideally (and logically) done through a continuum from the anonymity pole to the intimacy pole.¹⁶ The choice of the place one is appointed to on this scale lies in processes of affinity, recognition and identification. One feels closer to people one seems to relate with in terms of similarity (whether similarity of socio-economical status, intelligence, or taste for example). The lesser one feels related the more an individual slides on the scale towards the anonymity pole, and seems to be less understood. And what is less understood can induce a certain amount of anxiety.

In the last decades, Western society has changed through several processes of democratization (for instance in the domain of education, but perhaps more importantly in the domain of clothing). This has brought a change in the classification process, whereby it became more contingent or difficult to ascribe certain traits to certain categories of people. The result is what some sociologists call the ever-changing character of the stranger. This tends to give rise to confusion about who's who and how to classify individuals we meet in our daily lives.

Another problem lies in the fact that strangers are no longer temporary guests, but have become a permanent feature of the contemporary city. Strangers, with their own sets of customs and norms (that can also be hybrid forms of more than one culture, to complicate things even more), appear in the everyday life-world. They are no longer visitors, but equal citizens, like everybody else. This situation gives rise to a specific set of contingencies people will need to learn to live with.

These contingencies in classification and the and the augmentation of daily and multiple anonymous contacts in turn lead to contingencies and/ or changes in interactional processes.

2.3.2. The problem of definition of place.

Secondly, there is the difficulty concerning the definition of place. Besides the fact that experts do not come up with a consensus, the layman has the equally difficult task to define the place. The lack of an adequate definition of the place he is moving through or residing in, results in a lack of knowing how to act appropriately. For the comprehension of



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These two entrances share a lot of semiotic elements (well-lit atmosphere, ticket machines, the use of pictograms, etc.) which could lead to the conclusion that there is a strong affinity between them. Semiotically speaking, there is indeed a high level of affinity. However, the status of the two places is entirely different, one being a private (or privately-owned) car park and the other a public metro station.

the sense of interactions depends narrowly on the definition that the actors give to the space, wherein the interactions develop. As we will see in the next section, the specific problem of interchanges is that they can be classified as non-places, which have specific characteristics. They tend to confuse or render definitions even more complex.

2.3.3. The problem of the “de-publication” of the public domain

Thirdly, there is the problem of “de-publication” of the public domain. Through the process of growing individualisation in our society, and the heightened awareness of the self, the public space is increasingly used for private purposes. This can be explained because the latter is seen more and more as a space to move through, not to be in (or in other words, a desinvested place or in other cases an espace de passage).¹⁷ Furthermore, the decline of authority makes that some people deploy “private” behaviour in public. They are thought of as legitimized by the actor himself. This happens largely because of the lack of rule setting agencies, which set the “standard” for the right kind of behaviour.

2.3.4. The problem of ushers of the public realm.

The fourth and final problem is that people tend to turn to ushers of the public realm – private companies and the police alike.¹⁸ People become more sensitive to deviant behaviour – for a large part because it is deviant from their personal frame of reference – and at the same time their threshold of tolerance lowers. Parallel to this people are seeming to be losing their interactional capacities, namely the capacity to cope with inter-human traffic with strangers and to adapt the right frame of interaction in a given situation.

Ushers of all sorts are called on into the public scene to maintain and restore public order. In this way such ushers become the regulators of the public domain, instead of the



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Loitering is a typical offence that annoys people because it is in fact private behaviour in a public space. It opposes the idea of the public domain as a place to move through, and not to be in. While some places are designed to accommodate such behaviour (and so the activity ceases to be “loitering”), the greatest problem arises when this is neither the case nor the intention.

people themselves. Consequently, the renewal of social intercourse is not attained. On the contrary, they generate quite the opposite effect: They generate a societal frame where civilities and adjustments in social interaction are mediated, even become truly ‘technisized’, to use a blunt neologism.

Having outlined the contemporary problems concerning the relation between the public domain and social intercourse, we will now turn our attention to public transport. In particular, we will deal with the status of the interchange and social interaction within it.



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3. The interchange and social interaction

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For those knowing transit zones such as multi-modal interchanges, metro stations and the like, the above mentioned problems will be very recognizable. This is no coincidence. Due to the accelerated circulation of people (in terms of physical mobility) and the major role of public transport in this, there has been a significant growth of interchanges. In this way interchanges could be regarded as an important part of the public realm. So it is not the case that interchanges are problematic places an sich, but its status as a place and its characteristics are highly inductive to the problems rising in all forms of public places. Because of this, we need to consider the status of the interchange theoretically to be able to address the practical problems that arise in terms of behaviour and social interactions within these zones. In this section we will outline the theoretical basis concerning interchanges and the practical consequences for the interactions taking place in them. In the next section we will take a look at ways in which the interactions and bundles of interactions (or the so-called urban strategies) are formed; as people “use” the places.

3.1. Considering the interchange as a non-place

Before we proceed to examine the consequences of the status of interchanges as non-places, we would like to put forward a brief consideration. We are fully aware that the notion of *non-place* could be read in negativistic terms as a rather pessimistic and nefast notion. We are also aware that the concept has been used – fruitfully and un-fruitfully – by theoreticians and practitioners of all sorts and disciplines. For this reason the use of the concept has been widely critiqued and contested. For our purposes, however, we want to stress the importance of the notion of non-place in terms of a process contrary to a factual approach, political stance or intellectual strand.

The easiest way to explain non-place would be to give some of its prototypical examples. Besides metro stations, one could think of highways, airports and multi-storey parking lots. What these places all have in common is that they are places that are highly functional, and designed with a specific purpose in mind, c.q. transport. Ideally speaking and in contrast to a place, the non-place has no identity, no relation to its environment except for a functional one,

and its historicity is rather limited. As mentioned before, this is ideally speaking. Because, as most of us know, there are no purely functional places.¹⁹ Even the so-called non-places have some kind of identity in terms of the design used, like the colours, the concept adhered to, the names they are given, and so on. To be clear then on this issue: We are not claiming that the non-place in the pure form in fact exists.



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3.2. The problems of non-place

What are the problems of non-place? The problems of non-place emanate from its conception. Because of the complexity and utility of the place, there is a high degree of *instrumentality*. One can think here of the signage that has to be understandable and clear enough for anyone to use. Hence, there is the deployment of pictograms or certain colours to guide the user through the interchange.

Furthermore, the interchange as a non-place could be seen as a *contractual space*.²⁰ Its contractuality lies in the fact that when we enter the interchange, we are considered to have acknowledged the house rules, or rules of conduct. Because of its contractuality, the conditions or rules are communicated to the user by means of what the French call a *mode d'emploi*, or in English the directions of use. The directions of use are communicated again through pictograms, instruction boards and the like. This changes the relationship of the user with the interchange. Instead of a sort of *organic* relationship, acquired through what social scientists call socialisation, the relationship between the user and the interchange becomes highly *instrumental*.

This we can also see in the instrumental character of measures that “make the place work”. Here one could think of the entrance gates, the use of magnetic passes for travellers, and the fact that in some cases one has to *sign* the contract at the entrance by putting a card into a slot to be printed with the hour and place of entrance.



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3.3. The problems with non-place

It is its instrumentality that leads to problems *with* non-place. As everything is regulated by some kind of measure, rule or prohibition, a theoretical frame of reference emerges. But in practice, the rules are often but another sign on the wall. When the interchange is practised – as opposed to theorised – there are always minimal deviations or departures from the rules, which we shall call *ruses*.²¹ The ruse is one of the consequences of the use of instrumental measures to guide conduct. One good example of some of these ruses is given by Erving Goffman:

*"[...] A field is thus opened for personal enterprise. Hence, on buses, streetcars, and trains, seats are designed to hold two persons, and fully recognized to be designed to accommodate two strangers when necessary, nonetheless establish for the first arrival a territory he may attempt to retain for himself by standard ruses: he may leave his own possessions on the empty place, thereby marking it for his own and obliging competitors to move (or ask to have moved) something that symbolizes another; he may deny his eyes to those seeking a seat, thereby preventing them from obtaining the fleeting permission that they tend to seek, failure to receive which can cause them to move on to the next available place; he may expose some contaminating part of himself, such as his feet, or allow part of his body to fall on the disputed place, so that those who would use the place must invite contamination; and so forth."*²²



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The young man sitting on the railings presents an example of a ruse. Since there are no seats, he is sitting on the railings. Instead of their being used for their manifest function – to mark the end of the platform – the railings are being used for a secondary, latent function, namely as a seat.

In the latter example we can see that the design of seats on a bus or a metro platform is made with a certain idea in mind, and that when they are used by people, other usages arise. This is not only the case with furniture that was intended to be used as such. More frequently it are other elements in the setting, such as walls, pillars, railings or vending machines that are used for different activities than intended (e.g. hanging or sitting). Monica Büscher puts this nicely into words : « Social life thus harbours repetition and difference, in the sense of orderliness and variation, but also in the sense of a reciprocal relationship between what is and what could be. For designers and analysts alike, it can be useful to focus on difference and change. People discover and invent new practices – a frequently overlooked but critical resource for design. »²³

So there are almost always discrepancies between the way a rule or a space is designed, and the way it is actually used.²⁴ We cannot (and would not even want to) eliminate these discrepancies. Nevertheless, by carefully studying them and foreseeing such alternative uses, they can nourish design ideas.

The importance of the ruses for the question of design and insecurity, lies in their ambivalent character. Surely it is no crime to use a ruse. Most of the ruses even escape the net of incivilities. But they are no *legitimate* uses of the place. Hence they can induce feelings of unease or insecurity with other travellers, and they open up a so-called semantic field for discussion (where are we to draw the line of acceptable behaviour?). To outlaw or prohibit then even more acts, means to heighten the potential for conflict and to make up an even narrower semantic field. Instead of trying to reduce such alternative uses by rigidity (i.e. more prohibition, tighter security measures), it could be better to legitimate ruses through flexibility in design solutions.



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Designers could offer more choices to the travellers that allow for more possibilities in the use of the space.

A more flagrant form of denial of the rules consists of *abuses* instead of *uses*. The abuses rise from a non-conformity, which can be in part explained by the trainer and teacher metaphors.²⁵ Whereas behaviour in more traditional (non-technised) places is taught to people by means of socialisation (for example how to behave in religious institutions), behaviour in non-places is regulated by instrumental means. In the first case, the socialisation is done by parents and other sorts of teachers. We learn how something is done, and more importantly, why it is done (or *not*). In the latter case, however measures tend to have the character of a trainer: The measure prohibits certain behaviour, and sometimes one is punished for crossing the lines, but in the end it does not tell the individual why a certain rule has to be followed.²⁶ Moreover, as every rule is written or shown, some non-conformist individuals will argue that those things that are not written, are allowed – which is of course not the case.²⁷ On the contrary, it are these kinds of “alternative uses” or misbehaviours that frighten or tend to threaten users who use the interchange correctly. So the closed semantics of rule setting in interchanges cuts both ways: It lowers the standards for misuse and at the same time lowers the standards of tolerance.

In a nutshell, then, we can retain from this section that we could divide behaviour in interchanges into three different categories: First, we have the *uses* – by which we mean the correct use of the place. In other words, it are the uses the managers, designers and architects had in mind when they conceptualized the place. Secondly there are the *ruses*. By this we mean minimal deviations of the rules and/ or the uses that are put forward by those who designed the place, but that are reasonably acceptable. Finally, there are the *abuses*, which are outright violations of the rules that can by no means be accepted. There are also three rules of thumb for designers that can be linked to the notions of use, ruse and abuse, namely : to *facilitate* use, *legitimate* ruse, and *reduce* abuse.

Another thing to keep in mind is the non-organic social ground that constitutes non-places. They invite a social *mechanic* organization instead of a social *organic* one. The highly complex and technical nature that is necessary for interchanges to make them work and, additionally, the security measures taken, gives it a unique sociological character. When considering the design and applying new measures, one needs to be very weary of this character and one needs to keep in mind that the design of a place is inductive to the behaviour deployed in this place.



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A frequent form of abuse is the sabotaging of CCTV cameras to cover up other illegal activities such as mugging or writing graffiti. Paint is usually sprayed on the camera but this is easily detectable by the dispatcher watching the monitors. In this case, however, the vandals have used a transparent substance that blurs the images and cannot easily be detected. The strategic positioning of the cameras can play an essential role in preventing this kind of sabotage.



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Fences/ramps are often used to sit on. Although this is not prohibited, the design of the fence/ramp is not intended to be legitimately used as such. Nevertheless, it is often observed that fences/ramps and the like are used in this alternative manner.

4. Urban Strategies



4.1. Introduction

As mentioned above, there are different ways to act and react in and to a place. We pointed out the difference between use, ruse and abuse. In this section, we will focus on more specific ways in which people “cope” with social interaction in the public realm. Coping with social interaction in the public realm means transforming public space in a symbolic way. Lyn Lofland points this out perfectly when she states:

*The lone individual cannot transform the character of public space. He can, however, transform the character of his social psychological relationship to that space. By utilizing body management – by controlling gestures, facial expressions, movements and so on – the individual can create around himself a symbolic shield of privacy. He can, that is, move through public space in such a way as to make himself as inconspicuous as possible, while simultaneously communicating to anyone who might happen to look that he is definitely not open to interaction.*²⁸

Because of the impossibility to change the physical surroundings in a public space, people tend to deploy certain strategies when going out alone. To avoid certain confrontations, and in order to feel more secure, the individual is very cautious of the way in which he visually presents himself

Social interaction and breaches of it adhere to *symbolic* laws, as opposed to *juridical* laws. It is grounded in the social norms of a given society.³¹ Societies guide the behaviour of their inhabitants or citizens via these social norms in a sanctioning system. This system is known as *social control*. While legal systems are rather formal, the system of social control can be said to be informal and symbolic in nature. This means that – when we (designers, architects and students of public order) consider behaviour in interchanges and the like – we need to keep in mind that we are dealing with such a specific system of rules.³²

In this sense it becomes clear that offenses of the slightest kind have an effect on the feelings of security of travelers. Because of the contingencies of social interaction (cfr. Infra), and their ritual (or symbolic) nature, small breaches can have large effects on peoples’ feelings of security. A man bumping into a woman in the entrance hall or corridor of a metro station, not meaning to do so, will try to excuse himself or correct the wrong “reading” of the situation, but the woman in question already feels impinged upon. The situation or the breach is too insignificant to report to security officers or the police, but the dispositional fear of crime heightens nevertheless.³³ In conclusion Goffman stresses to have an alternative view of (social) control:

*We start, then, with norms and the process of social control whereby infractions are discouraged. We end by seeing that in the realm of public order it is not obedience and disobedience that are central, but occasions that give rise to remedial work of various kinds, especially the provision of corrective readings calculated to show that a possible offender actually had a right relationship to the rules, or if he seemed not to a moment ago, he can be counted on to have such a relationship henceforth.*³⁴

Although the practical relevance of these insights might not be clear at this point in the research, it is of utter importance that we establish this frame of reference. This will guide us during the fieldwork process and in developing design guidelines. The solutions supported by the above insights will be of a different kind than those that might be formulated by experts applying a legal philosophical approach.



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in public.²⁹ By and large, during social interaction in public, individuals are occupied with breaches of the non-written social laws of interaction. Individuals try to minimise these breaches in order not to be misunderstood by others. A traveller waiting for the next bus, for instance, will glance around, but he will avoid staring too long at another person, for it constitutes a *breach* of social interaction. When he actually does stare longer than necessary, the individual stared at feels impinged upon and begins to wonder why it is he or she is being stared at. Besides embarrassing situations, being stared at usually means an act of “aggression” (in a minor, though not unimportant sense of the term). This is why staring has such a strong and intimidating effect.³⁰

4.2. Urban strategies

There are many urban strategies, and some of them exist in many subtle variations. In this section we will turn to the main types of urban strategies, as described by Lyn Lofland and Ervin Goffman.³⁵ In specific we will look at:

1. the entrance cycle
2. waiting strategies
3. passing rules & civil inattention

4.2.1. The entrance cycle

The entrance cycle consists of a seemingly simple set of actions. Imagine entering a metro station from the street, or going from the metro station entrance hall to the platform. It seems a trivial act, but there are quite a few different approaches in doing this. We will consider just a couple of them, but there are many different tactics one needs to keep in mind. The entrance cycle can be broken down in three phases: checking for readiness, taking a reading and reaching a position.³⁶

Checking for readiness is of lesser importance in our current research. Nevertheless, for the sake of completeness, we will briefly consider it. Checking for readiness has to do with potentially embarrassing situations. Just before entering people check out and if necessary rearrange their physical presentation to make certain nothing in his or her appearance is other than they might wish. And should it be necessary, he or she takes care of any last-minute physical needs. Examples are: correcting the hair, coughing and letting body gasses go. As said, in our current research these will not be of utter importance.

Taking a reading on the other hand is of great importance. When having entered the setting, people try to familiarize with the layout of the setting and people present in it. The most common “style” here is by doing this while being *on the move*. But people who tend to feel uncertain – and by consequence not secure – will use some sort of *delaying tactic* through the use of the resources the environment hands out. Entering a bus could serve as an excellent example. When entering a bus, you want to check out whom you are going to be riding with. But stopping and staring (or scanning) at the front of the bus makes one the focal point of interest to people already on the bus. To avoid this scrutiny, people look for rationales to pause. On a bus, then, the buying of a ticket or the putting of the ticket into the slot can serve as such a rationale for pausing. Undeliberately, the practical function of paying a ticket facilitates an urban “check-out” or scanning strategy. The metro platform and the process of entering it, however, doesn’t always provide these rationales. Sometimes the traveller can look down on the platform from a higher level, or other times the escalator gives people the time to check out who’s on the platform. But this is surely not always the case.



Larger stations often have mezzanines. Since people can look down from them before descending onto the platform, they have some idea of who is on the platform. Besides the fact that it offers greater surveillance possibilities, people know what to expect before going down on the platform and vice versa.

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Another style to take a reading involves *stimuli restriction*. The individual restricts his scanning of the setting by choosing a specific area to scan. Such people for instance cast their head to the ground and scan the floor level. Choosing to avoid eye contact, they scan the entered place by not looking above knee-level. Another way of restricting incoming stimuli is to scan only one half of the setting. The individual takes a reading of the setting only of the side of the wall nearest to him, ignoring the rest of the space until he has reached his position.

These styles of urban scanning can be linked to feelings of unease (and by extension to feelings of insecurity), whereby some styles are used by people that feel very confident (e.g. on-the-move style), and other styles are adopted for “defensive” reasons (e.g. stimuli restriction style and delaying tactic).



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Reaching a position is the final phase of the entrance cycle. Reaching a position could involve finding a seat or a stopping and standing place. After taking a full or restricted reading – depending on the complexity of the setting and the amount of people in it – people deploy tactics to reach the place they chose.

One such tactic – mostly used in large, complex or crowded settings – is the *beeline tactic*. Focussing on the desired seat, for instance, the individual moves straight towards it without any hesitation. His body gesture will be straightforward, in every sense of the word. This sort of approach reduces the difficulty of the action. The individual cuts off incoming stimuli that could distract him or confuse him in his action. Furthermore he avoids looking at people who might be looking at him.



The woman on the right is creating a symbolic private bubble by turning away from the other people on the bench towards her child, thus “shielding off” interaction.

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A second tactic is similar, and is called the *object-concentration tactic*. The chosen spot is not looked at but the traveller chooses some object in the general direction of his destination and puts his attention on that. Thus a large wall clock, just above the exit might continuously receive the traveller's gaze. This method is particularly useful if the setting is not too crowded. When the setting is large and the distance to the position is great, the object of focus may change along the way.

4.2.2. Waiting strategies

The second type of urban strategies to our concern, are the so-called waiting strategies. Once one entered the setting and found a place to sit or stand, the trick is to sustain one's inconspicuousness and to continue to make very clear that



one is not open for interaction. We will look at two styles, in a nutshell, to give some idea of this strategy.

The sweet young thing is a waiting strategy predominantly deployed by young women. Such a young woman inevitably has

some sort of camouflage prop like a magazine or telephone to have something at hand and to act as if she was reading or the like. But in fact she is using such props as a camouflage to be on the look out for any approaching danger. The prop serves to demonstrate that she is tending to her own affairs, and that she is not looking for contact with (young) men. Sometimes she does gaze at her surroundings, but such glances are usually short and casual, as not to give any wrong impression and to avoid eye contact. When she does stare, it is mostly to the floor or any inanimate object in the setting.

The Investigator is a waiting strategy deployed by fairly confident people. The strategy involves a body movement that is not confined. As the Investigator reaches a position, such as the metro platform, he starts to survey the surrounding. After a thorough look around, he investigates in more detail what is visually available to him. This can be the station's architecture or design, but the focal point can also include other people waiting on the platform. Further, Investigators tend to move around on the platform, changing their field of vision or investigation. (So if the setting offers him a lot of inanimate things to look at, he usually stays put and does not look at other people.)

4.2.3. Passing rules and civil inattention³⁷

Between the entering and waiting, people have to move. And while moving they cross other people. This crossing of other persons involves a tightly structured set of activities. One of these sequences is so-called civil inattention. Civil inattention is a process that evolves before and during the passing or crossing of somebody.³⁸

When you are a few metres away from the other, you give him or her a glance to scan for potential danger, but also for practical reasons of not bumping into each other. With this glance you acknowledge to have seen the other. Then, just before passing or crossing, this glance is cast down to the ground as to affirm the other is of no particular interest to you. So the looker may pass the eyes of the other, but no recognition takes place.

This slightest of rituals of the public realm is yet one that constantly regulates the social intercourse of persons in our society. It is a tightly organized sequence, and by consequence breaches often occur. Un-deliberate breaches rise when there is a misunderstanding, for example in the choice of direction. The result then is an un-deliberate bumping into each other, which is unpleasant but is not necessarily experienced as threatening. Deliberate breaches on the other hand are. Deliberate breaches could be: Staring longer than necessary, deliberately bumping into the other or touching the other. As one can imagine, these sorts of breaches are felt as offences and make the victim feel threatened or intimidated. Let us note here explicitly that the use of civil inattention is an essential protective and defensive strategy for women. It is not just of practical use, but is essential for the wellbeing and integrity of women. Although then, it might seem very trivial to men, for women breaches of the process constitute an uncertain and less safe environment to pass through.



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5. Conclusion

Over the last four chapters we constructed a theoretical framework that aims at a specific understanding of the question of fear of crime in relation to the interchange and the role design can play in it. The theoretical framework serves as a blueprint for the further phases in the research project, namely for the fieldwork process and the elaboration of practical guidelines for the design of (intermodal) interchanges. In its own right, the framework can already serve as a reflexive point of reference for designers and managers alike.

In order to have a better and more comprehensive understanding of the factors inducing fear of crime we looked into the existing notions of fear of crime. The existing literature on fear of crime has for the largest part been elaborated in the field of psychology. However, more recently there has been a tendency to look at fear of crime in a broader sense. This made possible a move from a psychological understanding to a sociological understanding of the subject matter.

When we examined the sociological approach to fear of crime, it became clear that such an approach could be seen as a more holistic approach. Instead of looking at one factor, for example vulnerability or victimization, a holistic approach allows us to consider a large set of factors inducing insecurity. Besides the elements of consideration from within the individual (the psychological dimension) we saw that there is a great amount of pressure that is exerted on individuals, emanating from society at large and the present-day societal processes. Hence we changed the emphasis to these societal processes. In particular, we shifted the emphasis to interactions between people in the public realm and the interactions of people with the built environment of public space.

We also turned our attention to interchanges specifically to understand what kind of places these are. We came to define them as non-places, as to reveal their unique character in terms of social interaction. In this way we could consider the problems *of* and *with* interchanges in terms of social interaction between its users (and by consequence in terms of insecurity possibly felt by individuals). The result of the inquiry revealed a series of ways in which travellers can use the interchange. We made a distinction between the *use*, the *ruse* and the *abuse* of the interchange. We also came to the conclusion that we have to bear in mind the specific “social ground” on which interactions are formed. The social relations and interactions can be said to be of a lesser organic nature than in other places.

We concluded with a chapter looking more in detail at what these social interactions in interchanges are built up from. While the interchange is a place adhering to the rules of law, it is also a place where people adhere to rules of “symbolic” law. We saw that people cope with the setting of the interchange in a specific, symbolic way. Not being able to transform the actual setting, individuals tend to deploy strategies to make themselves more at ease.

In the further development of this research project, our focus will be on the strategies and tactics used by travellers. In order to nourish design ideas and formulate the practical guidelines afterwards, we will be using the theoretical framework to try and understand the aspects of the interchange.

Footnotes

- ¹ In this section, we draw extensively upon the work of Marquant (2005) and Hale (1996)
- ² See also Marquant (2005), Gabriel and Greve (2003), Stafford and Pettersson (2002), Ditton and Farrall (2000)
- ³ See Hale (1996)
- ⁴ See Stafford & Pettersson (2002), Ditton & Farrall (2000) and Hale (1996)
- ⁵ See Marquant (2005)
- ⁶ See Wilson & Kelling (1982)
- ⁷ See for instance Marquant (2005), Ditton & Farrall (2000)
- ⁸ See Van der Wurff et al (1989)
- ⁹ See Van der Wurff et al (1989: 144-5)
- ¹⁰ See Marquant (2005: 27)
- ¹¹ See Beck (1992), Bauman (1993)
- ¹² See Bauman (1999)
- ¹³ See Bauman (1993: 151)
- ¹⁴ See Bauman (1993: 153-4)
- ¹⁵ See Bauman (1993: 159)
- ¹⁶ See Schütz & Luckmann (1973)
- ¹⁷ See Sennett (1974: 12-14)
- ¹⁸ See Hubert (2005: 20)
- ¹⁹ See Augé (1992:100-1)
- ²⁰ See Augé (1986)
- ²¹ See Lofland (1996), Augé (1992: 101-2), de Certeau (1980), Lofland (1973) and Goffman (1971: 34)
- ²² See Goffman (1971: 34)
- ²³ see Büscher (2005)
- ²⁴ See de Certeau (1980). In his groundbreaking book, he discerns “stratégies” and “tactiques”: « [...] Bien qu’elles soient relatives aux possibilités offertes par les circonstances, ces tactiques traversières n’obéissent pas à la loi du lieu. Elles ne sont pas définies par lui. A cet égard, elles ne sont pas plus localisables que les stratégies technocratiques visant à créer des lieux conformes à des modèles abstraits. Ce qui distingue les unes des autres, ce sont des types d’opérations en ces espaces que les stratégies sont capables de produire, quadriller et imposer, alors que les tactiques peuvent seulement les utiliser, manipuler et détourner. » (de Certeau, 1980: 51)
- ²⁵ See Weyns (2004: 121)
- ²⁶ Off course, as stated earlier, this is ideally speaking. There are no fully technical places, nor are technologies invented in a social vacuum. Present-day innovations do try to approximate “human” cognition and behaviour. Nevertheless, interchanges tend to be fairly technical and this is also reflected in the behaviour in – and towards – these zones.
- ²⁷ See Weyns (2004: 123-4)
- ²⁸ See Lofland (1973: 140)
- ²⁹ By the term “visually” we mean the whole ensemble of body management and self-presentation, and not only the clothing one is wearing.
- ³⁰ Although body contact is considered a more severe breach of social interaction, Goffman points out the specific threatening force of staring: “Although in our society the offense that can be committed by intrusive looks tends to be slighter than other kinds of offensive incursions, the distance over which the intrusion can occur is considerable, the directions multiple, the occasions of possible intrusion very numerous, and the adjustments required in eye discipline constant and delicate.” (Goffman, 1973: 45)
- ³¹ We can define “social norm” as follows: “[A social norm] is that kind of guide for action which is supported by social sanctions, negative ones providing penalties for infraction, positive ones providing rewards for exemplary compliance.” (Goffman, 1971: 95)
- ³² Here we can already draw attention to possible discrepancies between what we stated earlier about the interchange as a non-place – which is based on what we could call a legal-philosophical system – and the system of social interaction or mode of conduct within them – which is based upon a generically different type of system, namely a symbolic one.
- ³³ Dispositional fear of crime is a long-term developmental process, which is “fed” by situational occurrences of fear of crime. “In principle, dispositional fear of crime can also change within subjects. [...] the “changeability” of the dispositional fear of crime reflects developmental changes within the person, such as “growing” in fearlessness or timidity. The dispositional fear of crime is the result of a long-term developmental process that is influenced by personal conditions and attributes (such as perceptive tendencies and coping resources) on the one hand, and by individual experiences of fear-relevant situations on the other [...]” (Gabriel & Greve, 2003: 601-2)
- ³⁴ See Goffman (1971: 108)
- ³⁵ The mentioned strategies are for a large part based on Lofland (1973) and Goffman (1971)
- ³⁶ For a full reading see Lofland (1973: 140-6)
- ³⁷ This is but one of the many features mentioned by Goffman. While it is not useful to enunciate his theory in full at this stage of the research, we will explain the most important process discussed by the author.
- ³⁸ But it is not necessarily during the passing. Civil inattention occurs in multiple settings and situations. The most well-known situations where civil inattention is used are on packed metros and in elevators.



CHAPTER 3.

Environmental design versus (fear of) crime: theories on situational crime prevention

1. Introduction

1.1. The situational dimension in this research project

In this chapter, we are introducing theoretical and practical studies that relate the physical (transport) environment with *crime* and *fear of crime*. It explores what we shall describe as the situational dimension of this research project: the physical context, the social-spatial interaction and the perception of the environment. The situational dimension closely relates to this research subject, directly linking the design of the built environment with (in)security and crime.

We reviewed existing research that focuses more particularly on the philosophy and strategies behind *situational crime prevention*: preventive tactics that, by influencing the environment or setting, aim to discourage criminal acts or less civilised behaviour. Indirectly, the role of the physical environment with regard to the *perception* of (in)security is assessed, as for example through the Broken Windows Theory.

1.2. The scope and limitations of *design and (in)security*

Design

In the context of this research, *design* covers the “total appearance” or “total experience” of the transport environment. This broad notion of design implies addressing the multiple disciplines that directly contribute to the look and feel of interchanges and stations: *urbanism and architecture* (stations, spaces, surroundings, logistics, etc), and a broad range of *design disciplines*: (product, environmental and interior design) catering for the design of vehicles, interiors, scenery, materials, lighting, furniture, signage, etc.

Indirectly, but just as influential in the environmental experience, we should also consider the daily impact of organisation, services, logistics and other functions that continuously support the transport system. Examples are: maintenance, cleaning, service personnel, and information and communication services at the site.

In order to accomplish one of the major goals of this project, i.e. to inform the various design-related disciplines about the impact of design for security, it is necessary to gather wide-ranging (but specific) information and guidelines. The following observations will be taken into account:

- Architecture and design are disciplines that generally lack training in crime prevention. This is not a general topic; crime prevention requires specific and continuous training (Eckblom, 1997).
- Many professions related to the field of transport have relatively technical backgrounds. Correspondingly, this remains a relatively mono-cultural and male-dominated area – arguably also valid for design and architecture.
- A positive note: the disciplines mentioned above are multidisciplinary by nature, and in principle ought to understand and incorporate emotional and subjective qualities in their profession.

The theoretical input from this research will – through the field research at a later stage – be developed towards a practical output in a wider perspective:

=> The information gathered in this project needs to reflect and address the views and requirements of a wide range of (usually more vulnerable) users that are under-represented among the transport profession, i.e. the elderly, young, female, foreign, mobility impaired or visually impaired.

=> Theory on design-related crime prevention and perception of security needs to be appropriately introduced to be integrated into the disciplines of architecture and design, as well as those involved in the management of the transport environments and their conception. As the wide-ranging information is inevitably generic or impermanent, further consultation of “design for security” by stakeholders should be encouraged and stimulated.

Security

The term “security” has a number of connotations. It can be used in the sense of making a property secure against theft, damage or vandalism, or to prevent unauthorised access or trespassing. In the framework of a transport environment, security comprises travelling in peace of mind or contentment. During any stage of a journey, passengers should be able to rely on their security. *Insecurity* relates to real or imaginary fears, a lack of security that can deter existing or potential customers. To use the definition of security by *the Home office, U.K.*:

‘Inducing peace of mind for passengers and allaying perceived or actual fears for their personal safety’.

Here is a further definition of “Safety” and “Security”, showing the distinction between these two terms that are related and often used interchangeably:

- *Safety* is generally reserved for technical or physical safety (measures to avoid bodily harm),
- *Security* comprises crime and the perception of security, and is used throughout this project.

Objective and subjective security

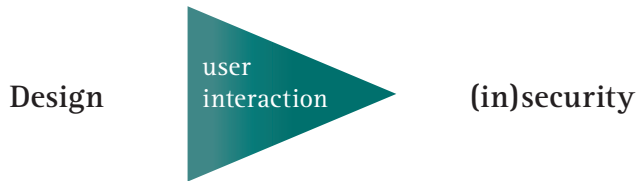
We can further distinguish between real or imaginary fears, as we similarly discern *crime* from *fear* of crime. Here, we make the distinction between *objective* and *subjective* generators of insecurity. Objective generators (in order of severity) are, for instance: actual threats, crimes or assaults, whereas subjective generators are, for example: discomfort, uneasiness or fear of crime. As both types of generators are related – objective violence or crime directly affects the perception of those involved, or lingers on as negative publicity – both are of interest in this research. Objective crime in the public transport environment is relatively low (although many crimes remain unreported, consequently crime statistics sometimes fail to provide adequate figures) “while the *perception of crime* has consistently been reported to be significantly higher in rail user customers surveys” (Cozens, 2002)

=> The research aims to find “objective” solutions, where the design of the transport environment prevents the opportunity of crime or discourages such events from happening. In this context, we include *environmental crime prevention* principles that deal with “objective” crime.

=> As well as research covering the objective dimension, we will examine research that covers subjective generators; uneasiness or *fear of crime* are “subjective” perceptions. Included are theories related to image, i.e. the Broken Windows Theory.

Between design and security: user perception

Evaluating the relationship between (design of) transport environments and the perception of (in)security requires the user as an intermediary. From a design point of view, the subject of this study could be seen as the user's interaction with the station environment, with the focus on his / her perception of (un)safety (the so-called *user perception*):



However, there are limitations: for instance, the *individual* user aspect is extremely variable. Depending on personal characteristics, experience or motivation, no user will notice identical *stimuli* the same way, nor classify them or deem them equally threatening. As most research in this field relies on large-scale surveys and quantitative data, little is known about the specific processes of perceived insecurity. However, since the ultimate beneficiaries of this project are public transport users, and the project requires local feedback, the focus on user perception remains a crucial objective.

“(In)security” and its three research dimensions

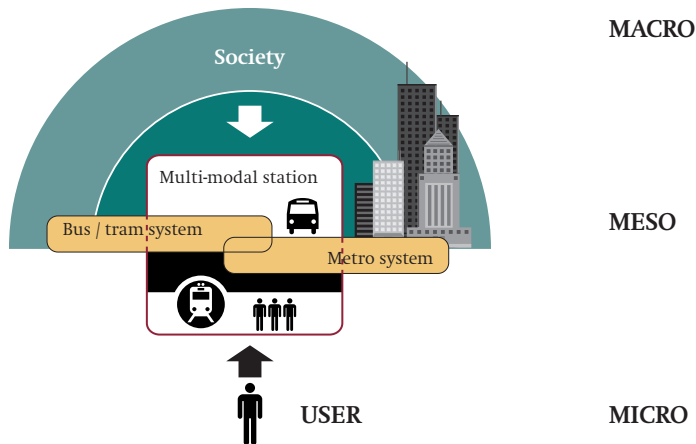
Insecurity has many causes; many more than we can possibly identify in the context of this project. As regards the *perception* of security, we can discern three major dimensions:

1. Societal factors
2. Personal characteristics
3. Situational factors

The relevant topics identified in this project, coincide with these dimensions (also imaginable as the macro, mesa and micro levels of the topic) and comprise the three major levels of this desk research:

Research dimensions of perceived (in)security in this desk research:				
chapter	dimension	topic	disciplines	scale
1	Organisational	Context and concept of the transit space in the urban environment and wider society	Urbanism, social sciences, politics	macro
2	(inter)personal	Social and behavioural theory, user attitudes and interaction with others	Sociology, psychology	micro
3	Situational	Environmental design related to crime prevention and (in)security	Architecture, design (-theory), criminology	meso

Because of the holistic nature of (in)security, the research dimensions are concurrent, and the research of each chapter remains largely interdisciplinary.



1.3. The impact of the situational dimension on this research project

Of the three dimensions covered in this research project, situational factors are of specific interest because they are the more tangible and (relatively) easily controlled and manipulated. The environment forms a strategic tool in the security issue, and is immediately relevant to the daily problems of public transport.

As well as stressing the situational significance in relation to the security issue, we should also emphasise the fact that as regards perception of security, the presence of strangers can be more influential than physical attributes of the environment. Since people have to deal with many other people in public transport, the perception of strangers remains a significant factor throughout this project. For this purpose, the social-spatial and (inter)personal interaction (as laid out in Chapter 2) will be related in order to serve as the foundation for the field research.

2. Research on situational crime prevention

2.1 Environmental criminology

Research relating crime prevention with the built environment is referred to as “environmental criminology”. Although the *perception* of security is not the central focus of these studies – this research predominantly promotes the “objective” security of the built environment – many measures and clues either directly or indirectly influence the perception of security.

Situational measures of prevention aim at influencing offender decisions that precede criminal acts: reducing the possibilities or opportunities for potential criminals or offenders to commit crimes or anti-social behaviour, by reducing the perceived benefits or by augmenting perceived costs. (Clarke, 1989)

In the 1960s, urban renewal strategies and the dominant car mobility of modern urban planning were criticised for destroying urban diversity and vitality. Jane Jacobs’ book *Death and life of Great American Cities* (1961) already argued that new forms of urban design broke down many of the traditional controls on criminal behaviour such as, for instance, the loss of “natural guardianship”.

From the 1970s onwards, it became more widely understood that modern architecture and other planning designs unintentionally created situations facilitating opportunity for crime (Saville and Cleveland, 1998). This observa-

tion led to the proposal of a wide range of modifications to the criminal justice system. Theorists – for the most part criminologists – have since underlined the importance of the built environment as a facilitator of crime occurrence. As the more legislative approaches to crime did not reap the intended success, several authors have pointed out the successes achieved through *environmental prevention*.

CPTED, defensible space and situational crime prevention

The theories that emanated from these insights are most commonly known as *Crime Prevention through Environmental Design* (CPTED) and situational crime prevention. CPTED is a multidisciplinary, theoretical approach pioneered by criminologist, C. Ray Jeffery, in his book *Crime Prevention Through Environmental Design* (1971), and this term has since been commonly used in North American literature. Concurrently, architect, Oscar Newman, developed *defensible space* (1972), an approach focusing on the built environment and, while being less multidisciplinary and theoretical than CPTED, it became more widely adopted – though with mixed success. Improvements and developments to both methods were implemented up until the nineties under the name of CPTED, with Jeffery’s variant remaining the most comprehensive.

Situational crime prevention, or SCP, is a notion that gained ground shortly after CPTED, and can be seen as its British counterpart. SCP has been heavily endorsed by the UK government as it is widely recognised as playing a crucial role in design to facilitate or discourage criminality. The Department for Transport and the Regions (DETR) stated in 1998 that “there is now an established link both between design and crime and the reduction of fear” (Cozens, 2002). Various other guidance notes and directives from the Home Office, Department for Transport, Crime Concern and the British Transport Police are all testament to this commitment. SCP is broader in scope; besides crime-reducing measures in the built environment, it also involves measures such as policing or management.

Before we turn to the methods developed by CPTED and SCP, we will take a look at their theoretical underpinnings.

2.2 Rationality models behind CPTED and SCP

The theoretical basis for CPTED and SCP is derived from two main academic criminological perspectives, namely the *Opportunity Theory* and the *Rational Choice Theory* (Clarke, 1989).

Opportunity Theory

The Opportunity Theory states that the nature and amount of crime is related to changes in *opportunity*. The present-day success of the mobile phone, for example, increases opportunities for snatching these small but valued objects, which have therefore become a popular target for theft.

Felson and Clarke (1998) argue that “crime opportunities are at least as important as individual factors and are far more tangible and immediately relevant to everyday life”. According to these authors, “opportunity is a root cause of crime, and no crime can occur without the physical opportunities to carry it out”.

Rational Choice Theory

The Rational Choice Theory suggests that offenders follow a rational decision-making process when committing a crime. This process can be viewed as a logical decision tree, where potential offenders decide at each step whether to continue or not. According to this theory, human behaviour can be

influenced by physical design since this process is influenced by the physical environment that provides “cues” for the offender that either facilitate or deter the offence. Environmental design affects the potential offenders’ perceptions about the possible crime site, and influences the chances of crime occurring. For instance, offenders may be faced with the following decisions (Taylor and Harrell, 1996):

- How easy will it be to enter the area?
- How visible, vulnerable, or attractive do targets appear?
- What are the chances of being seen?
- If seen, will the people in the area do something about it?
- Is there a quick, direct route for leaving the location after the crime is committed?

Routine Activity Theory

Although developed only in 1994 by criminologists, Lawrence Cohen and Marcus Felson, the Routine Activity Theory (RAT) provides another important theory supporting “environmental criminology”. RAT looks at crime from an offender’s point of view: a crime will only be committed if a likely offender thinks that a target is suitable and a capable guardian is absent. So RAT states that, for a crime to occur, three elements must be present at the same time

(www.crimereduction.gov.uk, 2004):

- 1) the presence of a suitable target;
- 2) the absence of a capable guardian (whose presence would deter or discourage a crime from happening);
- 3) the presence of a likely and motivated offender.

No matter how suitable a target is, unless a capable guardian is absent and a likely offender is present, no offence will occur.

1. A suitable target

Here, we can discern three major categories: a target can either be a person, an object or a place. There are plenty of potential targets around us, but not all of them are suitable. To describe suitable targets, two acronyms are sometimes used:

1.VIVA: Value, Inertia, Visibility, Access

2.CRAVED: Concealable, Removable, Available, Valuable, Enjoyable, Disposable

2. Absence of a capable guardian

A capable guardian is usually a person who by his/her presence deters potential offenders from committing an act. A guardian can be formal and deliberate (a security guard), or spontaneous and informal, such as fellow passengers or staff in a neighbouring shop. To some extent, guardians can be less real or even absent, for instance, someone who may appear round a corner or potential witnesses in the street or in a building. Providing an offender is aware of both the camera and the fact that he/she is being monitored, CCTV can fulfil the task of a capable guardian.

Capable guardians are distinguished, as guardians can be present, but ineffective. For example, staff might be present in a neighbouring shop, but without sufficient training or alertness to be an effective deterrent. A CCTV camera that is facing the wrong way may not be a capable guardian. Some examples of capable guardians (www.crimereduction.gov.uk, 2004):

- friends
- fellow passengers
- security guards or police patrols
- vigilant staff and co-workers
- Close Circuit Television (CCTV) systems
- neighbouring activities (neighbours, shops, etc.)
- access control / entrance or door staff

3. Motivated offenders

When a suitable target is unprotected by a capable guardian, there is a chance that a crime will take place. The last component of RAT is the presence of a possible offender. It is the offenders' assessment of a situation that determines whether or not a crime will take place (as described in the rational choice theory).

Crime Triangle or Problem Analysis Triangle

RAT introduces an important tool in crime analysis, the crime triangle. It can be used as a problem analysis triangle for crime (PAT, red triangle: victim, place, offender), or to develop resolutions or interventions (RAT: offender/handler, location/manager, capable guardian) (www.crimereduction.gov.uk, 2004).



2.3 Crime Prevention through Environmental Design and Situational Crime Prevention

The table below illustrates the three essential and original ideas behind CPTED and SCP: increasing perceived effort, increasing perceived risks, and reducing anticipated rewards:

	Increasing Perceived Effort	Increasing Perceived Risks	Reducing Anticipated Rewards
<i>Hard measures</i>	Target hardening	Entry/ exit screening	Target removal
	Access control	Formal surveillance	Identifying property
	Deflecting offenders	Surveillance by employees	Reducing temptation
<i>Soft measures</i>	Controlling facilitators	Natural surveillance	Denying benefits

Clarke's classification of Situational Crime Prevention Techniques

Looking at early CPTED, we can distinguish four cornerstones that have a considerable impact on crime occurrence. At the same time, we will point out the most important implications for the transport environment.

(1) Firstly, there is surveillance. The loss of traditional controls on criminal behaviour (the eyes and ears of the street, i.e. "natural guardianship") were to be reinstalled through a housing or building design where opportunities for surveillance were (re)established, and boundaries and preferred use within the space clearly defined. All measures aimed to discourage crime or various uncivilized behaviours.

=> The aspect of surveillance is undoubtedly one of the most important elements in public transport. The challenge of the transport environment is similar to the withdrawal of the community in the building environment; fear of crime can lead to travellers abandoning the system, further reducing natural surveillance. Especially for a system that is also designed to cope with high volumes of passengers, off-peak hours (even more so at night) offer the greatest challenge to design for natural surveillance.

(2) Secondly, there is the issue of territoriality. Residents with a strong sense of territoriality would be more likely to challenge or question the presence of anyone who does not belong there. Again, spatial design is believed to influence the creation of a sense of community or ownership for the "legitimate" users of the space.

=> In relation to the transport environment, we should add that *social attitude* matters a great deal in the relationship with spaces. The social attachment of travellers / residents in relation to territoriality requires specific design interventions as well as other kinds of measures to promote participation. Territoriality could likewise be viewed as advanced customer relationships; customer bonding, to earn loyalty and respect from the public, and tying up with the community through all kinds of social-cultural initiatives. [don't understand what the author is trying to say here]

(3) Thirdly, image is an important factor. Similarly to the Broken Windows Theory (which we will discuss further later on), it is assumed that cleanliness and tidiness send a message to potential offenders. It tells them that "this place is looked after, it is valued". Maintenance and cleanliness suggests surveillance and control.

=> As well as addressing offenders, a clean and tidy environment can reduce fear of crime among travellers. Maintenance and cleaning remove possible reminders of crime and uncivil behaviour.

(4) The fourth element is environment. The term environment refers to the *influence of surrounding activities and site protection by design*.

=> Defensive environmental strategies have been extensively developed under CPTED. We shall deal with their implications for the transport environment later on.

=> The good or bad influence of surrounding activities remains an important aspect in the perception of security. Ideally, symbiotic activities can be developed with third parties, simply to create "busy environments" up to strategic partnerships bringing added multifunctional or social cultural value.

Second generation CPTED

Early CPTED and SCP adopted the Rational Choice Theory models almost literally, and with considerable success. Projects designed with more natural surveillance demonstrated the reduction of opportunities for crime. Target hardening by the use of enhanced lighting, security locks, and fences for access control are other examples resulting from the rationality model behind CPTED (Saville, 1998).

However, several critics have questioned the primarily physical approach of CPTED. Saville and Cleveland, among others, claim that the shortcomings of the original CPTED strategy can be traced back to its predominant focus on rationality models. By strictly following the rationale of a potential offender, early CPTED created an 'offender-centred strategy'. The result has been criticised as a "brick and mortar approach", with a design focus on physical defence that sometimes worsens the perception of security (e.g. fences may increase fear of crime). Claiming that only half the job is done when only physical design features are addressed, the authors propose a more holistic environmental design, which they refer to as "second generation CPTED". In their view, designers and urban planners need to develop linkages between physical and social development; they need to strive towards an affective environment, with attention to features like relational structures, of thought and behaviour. Dutch CPTED is said to represent second generation CPTED. Below are five additional categories used in this approach:

1. **Human-scale development** emanates directly from the linkage between physical and social development. The larger the building unit, the greater the anonymity and the less we are able to get to know our neighbours. As early sociologists (e.g. Durkheim, Simmel) already argued, a sense of belonging to a city or even a neighbourhood becomes increasingly difficult in the realm of the modern city. It is not easy to create a "we" feeling if we cannot grasp what this "we" might be. Yet we have to consider that size is not the only explanation for a lack of territorial feelings in a place.
2. The importance of **urban meeting places** is essential for the social fabric of neighbourhoods. As the public domain has become more and more privatised – for instance, "construed" meeting places in contemporary shopping centres – the lack of functional public space to be used as urban meeting places can become critical. Besides, available urban meeting places can be inappropriately used; for instance, their public function can be restricted if they serve as a forum for anti-social behaviour or if they have been "claimed" by drug dealers. To reinforce their social function, social events can act as a catalyst. By holding such events (supported by the local environment) the urban meeting place can be promoted in a positive manner.
3. The importance of **youth clubs** is rarely underestimated. Yet the ways in which they are used, require concerns that reach further than the (physical) provision of club areas.
4. While it is stated that **resident participation** is essential, it does not necessarily occur. The implementation of strategies to increase such participation has to take into consideration the social composition of a particular neighbourhood. Socio-economic factors as well as ideological, religious and ethnic factors must be taken into account.
5. **Resident responsibility** is assumed to have a direct influence on their expression of territoriality. Depending on whether this territoriality is expressed weakly or strongly by residents, it may either deter or attract possible offenders. This is not only a question of physical design; there is also a social component. As most of the early CPTED were offender-centred, we must consider the notion of responsibility as a victim-centred strategy.

3. Evaluating situational crime prevention

3.1 Is situational crime prevention effective?

The Washington D.C. metro system has been identified in crime prevention literature as having been designed to prevent crime (La Vigne, 1997). Passenger safety was an important factor in the early planning phase of the Washington D.C. metro (opened in 1976) and the designers incorporated a variety of crime prevention features into the design. These included:

- High arched ceilings to produce openness and reduce fear
- Spacious platforms to increase feelings of safety
- Long, straight escalators to avoid mezzanines where criminals might lurk
- Overhead crossovers between platforms rather than dark frightening tunnels below the tracks
- Restful lighting designed not to cast alarming shadows
- Recessed platform walls and surfaces on trains that can easily be cleaned to discourage graffiti
- CCTV on platforms and at entrances to facilitate surveillance by staff and to make passengers feel safe
- Two-way radios for all employees to summon help or be alerted
- Attendants at platform entrances to provide assistance to passengers, monitor CCTV and deter fare evaders
- Intercoms on trains and emergency phones throughout the stations
- Electronic fare cards that open gates at entrances and exits
- No restrooms as these facilitate prostitution or drug dealing

These design features were reinforced by good management and policing practices:

- Clearly posted and stringently enforced rules regarding behaviour on the system (e.g. no smoking)
- Use of public address system to chastise rule violators
- All stations staffed during operating hours
- Services run to a tight schedule to minimise waiting times
- Number of carriages reduced during off-peak hours
- Clear signage and system maps
- System closed late night/early morning
- No advertisements allowed on platforms to avoid defacement
- No retailers allowed on the system, nor food or drink to avoid litter
- Rapid repair of vandalism and graffiti.

Source: Home office, Crime Reduction Toolkits – public transport, www.crimereduction.gov.uk/toolkits/pt00.htm

La Vigne (1997) compared the Washington D.C. metro to three other urban rail transit systems, and found that it had less crime than the other systems. Despite an initial lack of proof behind this claim, further evidence revealed that the system's crime levels were indeed much lower than those in the communities it served. If the system did not have any influence on crime levels, then there should have been a strong relation between crime in the station and above ground. And yet, except for assaults, this was not the case.

The Washington metro is one of the more documented examples showing that “designing in” crime prevention is effective. However, La Vigne found that it was not possible to assess the exact result of each intervention, and stated that it was complicated to assess whether or not a design was effective. (Eck, 1997)

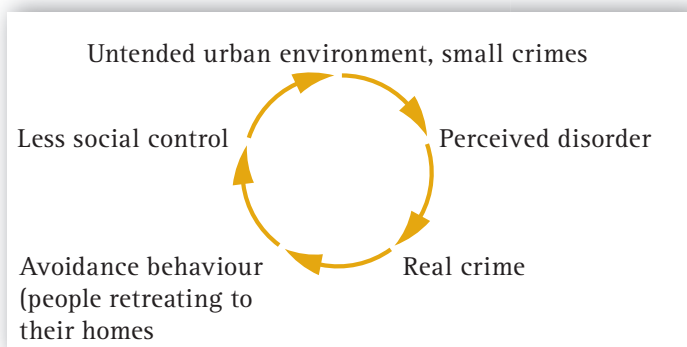
3.2 The difficulty of assessing crime prevention measures

Although there are several evaluations of crime prevention in public transport, relatively little is known about the effectiveness of these interventions. To some extent, this is due to the complexity in assessing complete station designs and the broad nature of the changes involved. Many different conditions and variables hinder any “laboratorial” proof. In addition, a wide variety of crime types are applicable to transportation systems. “Victims” vary between a large array of physical facilities and human subjects: the entire cross-section of customers and staff. To make matters more complicated, one should also consider the “diffusion of benefits” and “crime displacement effects”.

In order to better understand the effectiveness of situational crime prevention, we will briefly look at the theories that criticise and support it.

Broken Windows Theory

In 1982, James Q. Wilson and George Kelling published *the Broken Windows Theory*, which is a crime-fighting theory that is widely applied today. The theory argues that when one stops “small crimes” such as vandalism, graffiti, littering, public drinking and loitering, serious crime will be discouraged. The authors developed the idea that when neighbourhoods are uncared for by its residents and the authorities, this lack of control will foster serious crime. The crux of the argument was that perceptions affect reality: perceived disorder has an impact on real disorder. As the authors put it: “One unrepaired broken window is a signal that no-one cares, and so breaking more windows costs nothing.” It is a downward spiral as the following diagram shows:



The Broken Windows Theory is another example of a contagion theory (Eck, 1997). Contagion suggests that when offenders notice one criminal opportunity, they often detect similar but previously overlooked opportunities. The result is a spread of crime.

The Broken Windows Theory was a plea for the authorities to act responsibly and repair the first broken window, literally and figuratively, to stop the situation from getting worse. The authorities were also pressurised into acting tough on small “crimes” ranging from vandalism to issues such as loitering, which technically is not illegal. According to some critics, the theory is abused to install strict “zero-tolerance” policies, as for instance in New York City. Critique was swift; it was argued that the criminalisation of “quality of life” offences entailed the criminalisation of poverty. Long-time critics – Harvard sociologist Robert J. Sampson and professor Stephen Raudenbush – further argued that the determining factor affecting people’s perceived security is not a decaying urban environment but race.

There are many cases supporting the Broken Windows Theory, but the evidence usually applies to the whole package of measures. John Eck (1997) mentions some examples:

An intensive Clean Car Program (CCP) was implemented in 1984 to restore passenger confidence in the safety of the New York subway system, and “deprive vandals of the benefit of seeing their graffiti”. Train cars were cleaned within two hours, or taken out of service. Other measures included upgraded lighting, fencing, patrolling of cleaned cars, targeting repeat offenders, and youth education. By treating the physical appearance of the system, it was hoped that this would make the public feel safe and attract more customers, introducing a positive chain of events. Although not eliminated, the problem was brought under control.

The Victoria (Australia) transit system copied this effort, rapidly repairing and cleaning vandalised equipment and increasing police enforcement. It was shown that train availability increased 45 % and that reported crimes against persons declined 42 % (Carr and Spring, 1993, Eck).

Another good example is the anti-graffiti project which was started in 1996 by the Rijnbeek Neighbourhood Association (Helmond, Holland). A specialist company was employed to remove all graffiti immediately. In less than a year, the graffiti problems had been mostly resolved, the level of crime reduced and people felt safer.

The Broken Windows Theory is of interest to our study, not so much in the sense that small crimes induce serious ones, but from the point of view of perception of security. This is also supported by the *Legacy of Crime Theory*, mentioned hereafter.

Legacy of Crime

“Legacy of crime” refers to the visual heritage of crime; the physical scars and traces that vandalism leaves behind. Neglecting to repair or clean these traces leaves a reference to uncivil behaviour and acts as a possible trigger for feelings of insecurity that linger long after an act of vandalism has occurred.

Data from the 1994 British Crime Survey (BCS) supports the Broken Windows Theory with the findings of Kelling and Wilson, especially with regard to the aspect of perception. The survey analysed factors contributing to anxiety about crime. It identified a direct link between perceptions of disorder and concern about crime; this effect was independent of other factors such as actual crime levels. Similar analyses were conducted in 2000, and the results were consistent with the 1994 findings. Perceived levels of “incivilities” were perceived as important. In areas with a high level of perceived disorder, i.e. litter and graffiti, people tended to be more anxious about crime and security. The analysis identified “seeing signs of crime in the neighbourhood, such as vandalism and litter” as one of the factors that increased anxiety about crime and fear of victimisation.

People in general feel that poor maintenance, rubbish and the presence of vandalism and graffiti all suggest a lack of management, care and control of the environment. Thus, signs of a lack of management and control increases people’s sense of vulnerability and concerns for personal security.

Crime Displacement Theory

Criticisms against “situational crime prevention” have long been fuelled by the *Crime Displacement Theory*. Using environmental measures to reduce the opportunity for crime, is said to only move (displace or deflect) crime. Felson and Clarke (1998) described five ways to illustrate how displacement of crime can occur:

- crime can be moved from one location to another (geographical displacement);
- crime can be moved from one time to another (temporal displacement);
- crime can be directed away from one target to another (target displacement);
- one method of committing crime can be substituted for another (tactical displacement);
- one kind of crime can be substituted for another (crime type displacement).

According to Stephen Town (2001), the displacement theory is widely accepted because it is instinctively seen as commonsense. But crime is not simply displaced in the way or in the amount that commonsense assumes it will be. Hesseling (1994) says: “Thirty-three of the studies reviewed found some displacement, although overwhelmingly small in scale. In fact, researchers that were looking for displacement have often found precisely the opposite” (see further under “diffusion of benefits”).

Town gives two reasons for the lower level of displacement: the *Crime Opportunity Theory* and the surprisingly short distances travelled by criminals to commit an offence. Crime opportunity is a necessary condition for crime to occur, and is even considered by Felson and Clarke to be a “root cause of crime” and “at least as important as individual factors”. Town further mentions a host of reports stating that an overwhelming amount of crime is committed relatively close to home, and concludes that reducing local opportunities means reducing crime: “This is not to say that partial displacement does not exist or that some crimes are not more prone than others. However, the conclusion is clear: crime prevention initiatives can produce very substantial net gains, and commonly very little or no displacement is found.” (Town, 2001).

Positive side effects: diffusion of benefits

Researchers looking for displacement have often found the opposite effect: instead of finding that crime had been temporarily or spatially replaced, they noticed a greater reduction in crime than expected or intended.

As diffusion of benefits is not very well researched, the evidence is not as strong as that behind the displacement theory. Nevertheless, this possibility cannot be rejected on empirical or theoretical grounds. “In fact, there are good theoretical reasons to believe diffusion of benefits might be common.” (Eck, 1997)

Under some circumstances, offenders may be uncertain about the scope of prevention efforts and avoid both the blocked opportunities and similar unblocked opportunities. When this occurs, prevention may spread.

Bad and good neighbours

Research has revealed that neighbouring activities interact with one another, and – either negatively or positively – reinforce the overall security situation.

A range of different activities are regarded as negative for crime and security, from violent video games and gambling machines to off-licences, pawn brokers, sex shops or cash machines. When these places are combined with areas for the general public, such as transport environments, they attract a clientele that has an influence on the perception of insecurity. “Negative” land use, desolate and dilapidated areas and vertical infrastructures blocking visibility and natural surveillance also negatively affect perceptions. However, a host of symbiotic activities can be imagined to bring about a positive atmosphere and liven up a place.



3.3 Conclusion: Improving Situational Crime Prevention

Looking at the four original principles in CPTED, we notice that none of these strategies seem to have lost their value with regard to their possible application to the station environment. They do however require a broader, more holistic interpretation in order to enhance the subjective dimension needed in our research project: the perception of security.

Contemporary environmental crime prevention should by now acknowledge the possible counterproductive effects of physical interventions. Therefore, it needs to distinguish between objective and subjective measures of crime prevention, and to promote those design interventions that positively affect both objective crime and subjective fear of crime.

We can transpose the four strategies to the station environment, and provide the following interpretation:

(1) Designing for natural surveillance:

==> Natural surveillance is essential in maintaining ‘natural guardianship’ among travellers.

==> The environment and its atmosphere should encourage ‘natural guardianship’ and promote the intervention of others (see also point 2).

==> Natural surveillance and safety in numbers are related (‘circle of fear’): maintain surveillance levels and avoid loss of travellers.

==> Design for natural surveillance can flexibly cope with high volumes of passengers, and simultaneously, especially effective in off- peak hours. This can consist

of ‘scalable’ use of space, environments that adapt to the human scale and measure of different volumes of travellers.

(2) Creating a feeling of ownership or territoriality:

==> Social attachment to the transport system/environment can increase sense of responsibility among travellers or neighbouring residents. Design interventions (on different levels) can be used to promote this participation.

==> Ownership or territoriality could be likewise viewed as advanced customer relationships or customer bonding, enabling to earn loyalty and respect from the public. Different kinds of social-cultural initiatives are suitable to improve relationships with the travelling community.

(3) Fostering the image of a place:

==> Cleanliness and tidiness are an important factor in the user experience and image of the environment.

==> Addressing possible offenders: maintenance and cleanliness are a deterrent: hinting at surveillance and control.

==> Addressing the travellers: a looked after image reduces fear of crime. Precise maintenance and cleaning to erase references to vandalism or other uncivil behaviour that occurred.

(4) Improving the environment and minimising “bad neighbours”:

==> Site protection by design refers to defensive environmental strategies, which can be applied to the transport environment. Developed extensively under CPTED (among

others), proposed measures range from access control, over natural surveillance to CCTV.

==> Consider the perceived insecurity of defensive environmental strategies: evaluate the objective advantages of a physical measure carefully against the subjective implications or connotations (for example: evaluate the functional protection by a rugged fence against its (possibly) uninviting or intimidating perceived feel).

==> Subjective measures can be effective generators to improve the perception of security: enhancing the environment to create a positive ambience and feel.

==> Subjective measures can be effective generators to improve the perception of security: bringing distraction or entertainment, effectively diverting one's attention to or feelings of insecurity.

==> Activities in or surrounding the transport environment are important actors in affecting the security perception. The influence can be either positive or negative.

==> 'Bad neighbours' are those conflicting a secure situation or atmosphere in the station (or its surroundings, entrances or pathways). They can for example consist of illegal, unpleasant or noisy activities, businesses with incompatible policies, or in short anything putting off travellers.

==> Positively, symbiotic neighbouring activities can spontaneously arise, or be successfully developed with third parties. From simply creating 'busy environments', up to strategic partnerships adding multifunctional or social cultural value.

In a broader context, second generation CPTED now acknowledges the social dimension and the need for a sense of community, analogue to the discourse of public space in sociology and urbanism (see Chapter 1). In this respect we can interpret second generation CPTED as a new form of sustainable development, where "places" or affective social zones are created for communities (or the community of travellers), just as we plan the conception of the functional and logistical space. An affective community environment, that promotes diversity and opportunities, the creation of private as well as common places for social interaction, can have a better capacity to resolve many local "problems" on its own terms.

References

- Clancy, A., Hough, M., Aust, R. and Kershaw, C., Crime, Policing and Justice: The Experience of Ethnic Minorities – Findings from the 2000 British Crime Survey, Home Office, 2001
- Clarke, R. V., Theoretical Background to Crime Prevention through Environmental Design (CPTED) and Situational Prevention, 1989
- Crime Reduction Toolkits – www.crimereduction.gov.uk/learningzone/rat.htm, Home Office, 20 July 2004
- Crime Reduction Toolkits – public transport, www.crimereduction.gov.uk/tookits/pt00.htm, Home Office
- Crime Concern, People's perception of personal security and their concerns about crime on public transport, 2002
- Dozens, Paul, Exploring crime and fear of crime, Public Transport International, February 2002
- Eck, John E., Preventing crime at places, Chapter 7, 1997(?)
- Eckblom, Paul, Gearing up against crime, a dynamic framework to help designers keep up with the adaptive criminal in a changing world, Home Office, October 1997
- Farrington, David P., and Brandon, C., Effects of improved street lighting on crime: a systematic review, Welsh Home Office Research Study 251
- The Home Office Policing and Reducing Crime Unit Research, Development and Statistics Directorate 1998
Discouragement of crime through civil remedies: an application of reformulated routing activities.
- Liggett, Robin, Protecting against transit crime: the importance of the built environment
- Loukaitou-Sideris, Anastasia, Urban Planning/Architecture, UCLA, Professor, Department of Urban Planning
- Poyner, Barry, What works in crime prevention, an overview of evaluations, Barry Poyner Research Consultancy
- Transit cooperative research program sponsored by the Federal Transit Administration, Improving transit security, A Synthesis of Transit Practice, Transportation Research Board, National Research Council, TCRP Synthesis 21
- Saville, G. and Cleveland, G., 2nd Generation CPTED: An Antidote to the Social Y2K Virus of Urban Design, 1998
www.pac2durham.com/resources/schools.pdf
- Stafford, Julia and Pettersson, Geraldine, Vandalism, graffiti and environmental nuisance – Literature review, Department for Transport, prepared by crime concern
- Taylor, R.B. and Harrell, A., Physical Environment and Crime, NIJ Research Report, cbs.marketwatch.com, 1996
- Town, Stephen, Crime displacement: The perception, problems, evidence and supporting theory, October 2001
- Wortley, R., Guilt, Shame and Situational Crime Prevention, www.popcenter.org/Library/CrimePrevention/Volume%2005/06%20wortley.pdf



CHAPTER 4.

Method and research strategies of the fieldwork

Design vs. security, 2nd phase:

The second phase of the design vs. security project consists of the fieldwork.

1. A good and bad practice

The field research will take place in twelve different stations/transfer areas, in European cities, selected in collaboration with the operators. Every operator will have to choose two of his/her stations, transfer areas for study, preferably a good and bad practice. The bad practice will provide insights into the negative design features of the station and how these need to be mitigated. The good practice allows us to distinguish the elements that constitute the station's specific (local, national) and general (global, generic) identity.

2. Three levels

The preceding chapters provide us with an analytical framework from which the following research and analysis tools for the fieldwork are drawn. The tools are to facilitate high quality design of the interchange of public transport. These take into account the three levels on which the research was conducted, having to do with:

- (1) identity issues
- (2) urban strategies
- (3) the public perception regarding safety.

(1) Level one consists of understanding the urban context and identity of the interchange. The method and research strategies involve identifying the qualities that make a place special, looking at its history and physical form. This level is about character appraisal. The information can be obtained by for example walk through, mapping techniques (e.g. photography and video) and archive research. Additionally, a legibility analysis of the transit station can be conducted, by asking users to draw a map of the transit area in terms of edges, nodes, paths, landmarks or districts. This provides information as to what the memorable positive features and the negative characteristics of the space are.

(2) Level two consists of recording, analysing and understanding how the physicality of the interchange affects the urban strategies and interactions of people. "Interaction analysis is the interdisciplinary method for the empirical investigation of the interaction of human beings with each other and with objects and their environment."¹ Social interaction and urban strategies are not so trivial, nor so natural as they seem. It is about how people use space, or how they behave in the presence of others who might seem threatening. The observations and reflections made will help direct design development and changes to the interchanges of public transport. The information will be obtained through systematic observation and recording of patterns of behaviour through notes, photography and video recording. We will further examine the station's accessibility and liveability, and map the different forms of activity.

(3) Level three consists of identifying how real factors in the built environment facilitate crime and encourage fear of crime. A safety site assessment will be conducted whereby the transport police or security personnel may provide assistance. By holding a crime prevention through environmental design safety audit, it is possible to identify the safety issues and concerns in the interchange.² The actual and perceived safety issues can thus be incorporated in the planning and decision-making process. The audit involves asking community user groups about their feelings of safety when using the transport system.

3. Systematic camera recording and direct observations

In the first instance, the research team will execute a number of observations in the selected waiting and transfer areas. The observations will be conducted by means of systematic camera registration (photography and video), and by direct observation methods. The goal of the observations is twofold. An initial observation is aimed at the exploration and inventorying of the space, in other words, the first data collection. During these observations the terrain will be explored and mapped, and the behaviour of people recorded. The second goal of the observations is to systematize the gathered data.

For a first reconnaissance of the waiting and transfer areas the research team will be conducting systematic camera recording and direct observations. Systematic camera recording can be defined as a process whereby cameras are installed in the research field to record behaviour systematically during a given time-span – either by video or so called time-lapse photography. Additionally, it also comprises a systematic inventorying of the spaces by taking photographs and by filming. The direct observations can be explained as data collection in the field, based on personal impressions, which are written down in field notes.

4. Why a visual approach?

The use of the camera as an instrument for exploration provides research material in which one can find complex wholes of visual details, immediately recognizable material objects as well as myriad of indications and not immediately noticeable reflections of social relations and interactions, which do not have to be fully known at the time of recording.³ Advantages are legion. Besides the fact that it is, cost wise and time wise, economical, the gathered (raw) data can be used as “visual records.” This means that the photographs and videotapes can be used as extra-somatic memory. This way practical problems that sometimes occur with direct observation – for instance the effects of fatigue, and impressionist or incomplete observational field notes – can be avoided by making use of the mimetic characteristics of photography.⁴

This does not mean that the method of direct observation does not offer complementary advantages vis-à-vis systematic camera registration. Whereas photographic images have a great mimetic strength, they do not give a full impression of a place. The experience of a place involves different senses. Through direct on-site observation, we will be recording the so-called “feel” of the place, based on touch (e.g. the experience of textures) sonar and hearing triggers. This way, our strictly visual impressions are complemented by physical experiences.

5. Qualitative interviews and accompanied voyages

A representative panel of users and non-users, and employees of public transport will be made up.⁵ The main objective of the interviews is to gather qualitative data concerning the tendencies of preferences in design material, the urban strategies deployed by users, the reasons for using or avoiding the interchanges, emanating from feelings of (in) security. 3+, 3- surveys, also known as “three questions surveys” will be conducted to identify the things that people like and dislike about the interchange and their suggestions for change will be recorded.

After the selection and composition of respondent groups accompanied voyages with elicited photo production will take place. Next, these respondents will be subject to semi-directive interviews with photo and/ or video elicitation.

Accompanied voyages with elicited photo production

The researchers will accompany selected travellers and employees in their moves.⁶ The respondents are to be interviewed on their feelings and perceptions of (in)security. The interviews have an in situ character, which allows the material (physical) surroundings – the place as well as people – to be used as stimuli for conversation. There is also the possibility to offer the respondents photo cameras, so they can take pictures of the places where they feel unsafe, or on the contrary, where they feel safe.

This way the traveller or the employee takes on the role of expert, which has a positive effect of attraction (the subjects feel more engaged and so they talk more freely). As rates of response lower these days – due to the expansion of marketing research – the use of more conventional methods, such as standardized questionnaires, are less apt to collect data necessary for this kind of research. After this first round of interviews, the photographs and other data will be used as input for the semi-directive interviews.

Semi-directive interviews with photo elicitation

The selected group of respondents of the accompanied voyages will be asked to do a follow-up interview. Such an interview takes place in a quieter environment, as to go deeper into the matter. It serves to explain their opinions, feelings and emotions better and in depth. The respondents are asked questions using the photographs they (and others) took as stimuli. In this way, the photographs allow to get more contextual information (the same photo may have different effects on different people), so the researchers can delve into the context and the meaning of the pictures and the feelings of the interviewed people.

As we are dealing with a research question about emotions – perceived security – the combination of an elaborate questionnaire and photographs is most appropriate. One gets not only facts but feelings as well. This is because photographs evoke deeper elements of human consciousness. Exchanges based on words alone utilize less of the brain's capacity than exchanges in which the brain is processing images as well as words. As this research project is people centred and the outcome of it should be practical, the instrument of photo-elicitation has a major advantage to the quantitative approach. Photo-elicitation fleshes out the naked percentages of the quantitative studies and enlivens them with more authentic opinions.

6. In the final analysis

By video recording the interactions of people in the interchange and by analysing surveillance footage of the setting, we are able to analyse and understand how social interactions take place. The original and in situ mode of conduct is looked at and interesting parts are thoroughly reviewed. This is what happens after the rough editing of the videotapes: the multidisciplinary team is brought together for a so-called “group viewing session.” During such a session, we look at the rough edited video material, and determine what is significant from different points of views or expertise. Comments are given and certain sequences are reviewed that permits us to go into more detail of the matter. The videos are looked at with an open view: this means that we do not establish categories beforehand. This allows us to have a broader point of departure for further analysis.

In the final analysis, the initial comments and views of the expert team and the interviewed respondents will be fine-tuned into working categories. The rough edited tapes will also be polished up and finally handed over to the design and architecture team who will formulate practical solutions/guidelines for the interchange.

Footnotes

¹ See Jordan & Henderson (1995: 39)

² The Urban Design Toolkit, published in February 2006 by the Ministry for the Environment, New Zealand, www.mfe.govt.nz

³ See Pauwels (1996: 56); Collier (1975: 214)

⁴ See Prosser & Schwartz (2000: 122); Collier (1975: 219)

⁵ The sample is to be agreed upon between the researchers and the operators. One proposition would be to take a sample of the typical costumers (users as well as non-users) that are as such identified by the operators. Possible groups could be: minority ethnic women, senior citizens, parents and toddlers, shoppers, commuters, disabled motorists, residents associations, people with visual impairments, students and teenagers.

⁶ For the accompanied voyages with the travellers we adopt the so-called “whole journey approach”. Although often called whole journey approach, in practise it usually results in a station-to-station journey. The importance, however, lies in a holistic treatment of the journey, in stead of focussing on separate facets of the journey. Concerning the in situ interviews with employees, we will be following some of the floor personnel (security as well as maintenance) in their daily routine.

⁷ See Harper (2002: 13); Collier (1975: 222)

⁸ See Gloor & Meier (2000)

⁹ See Jordan & Henderson (1995: 44)

The background features a series of concentric, wavy blue lines that create a sense of depth and movement. In the lower-left corner, there is a stylized, wireframe-like representation of a hand or a series of fingers, also composed of blue lines, which appears to be reaching upwards towards the text.

Annex 1.

Impact of olfaction, the sense of touch and hearing on crime and the fear of crime in interchanges.

1. Introduction

Hans Makart

The senses have been described in literature for many centuries. Traditionally, we distinguish among five of them: visual perception (sight), auditory perception (hearing), olfactory perception (sense of smell), gustatory perception (taste) and tactile perception (touch). These 5 senses are thought to be or defined as being the interface between the human being and the physical world in which he or she moves. They enable him or her to decode situations and interactions with the world in order to understand it and to move around in it without difficulty.

There are other senses in addition to the five fundamental senses mentioned above. We will not be discussing the 6th human sense here because it is more a popular myth than a proven scientific fact. It is described as the sense of intuition and is also often cited as an inherently feminine sense.

On the other hand, it is interesting to note that science breaks some of those 5 senses down into other senses. For example, touch: this groups together different senses, which can be categorised as follows:

- Thermoception: or the ability to distinguish between the sensation of 'hot and cold'.
- Proprioception: or the ability of prehension (gripping or the potential to pick up and hold objects and to feel them against the skin).
- Nociception: or the ability to perceive dangerous stimuli (nociception can be considered a sense that is common to touch and taste).

We can also single out equilibrioception or the sense of human balance; this is found in the inner ear, the bastion of hearing.

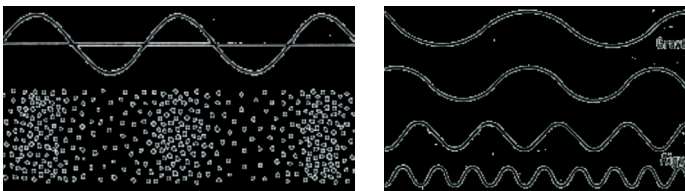
The aim of the first part of each chapter will be to define and explain the rudimentary biological foundations of our senses. It would seem apparent that, in order to comprehend the real nature of these senses, it is first of all necessary to understand the basics of how they work.

2. Auditory perception (hearing)

2.1. General remarks

The sense of hearing is the human sense that enables us to perceive sounds (to hear). But what is the action of hearing? Hearing something is the result of a physical phenomenon. When an object moves, when a guitar string vibrates or when a person talks, they all produce sounds. These sounds are, in fact, vibrations, which are changes in air density.

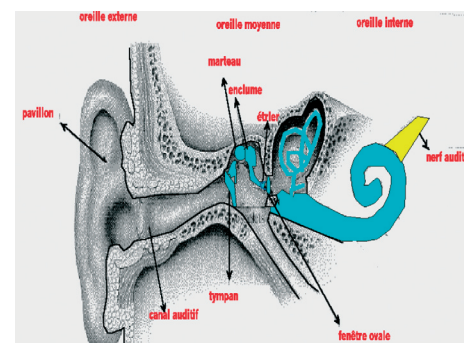
The air is compressed and decompressed in phases. These air compression and decompression phases hit the person's ear and he or she then hears these sounds.



Picture (a) illustrates a sound wave. The top part illustrates the physical representation of the sound wave, the bottom part shows, in diagram form, the alternation between the phases of compressions and decompressions of the air molecules. Picture (b) illustrates the difference in representation between high-pitched and low-pitched sounds. This difference lies in the frequency, that is to say in the periodicity of the compression phases (air molecules close to each other) and decompression phases (air molecules far away from each other).

These successive displacements of air will penetrate the auricle (external ear), go through the auditory canal and hit the tympanic membrane (ear drum). This will then pass on those vibrations to three auditory ossicles (the malleus, the incus and the stapes). The stapes will spread the vibrations to the cochlea through the middle ear. The fluid contained in the cochlea and in contact with the middle ear will lead to the movement of a particular membrane, called the basilar membrane. This is shaped like a trapezium elongated upwards. The narrowest part of the basilar membrane is for the lowest-pitched sounds. It is also the part situated close to the middle ear (the place where the stapes hits the cochlea). The part farthest away detects the highest-pitched sounds, that is the sounds with the highest frequencies. This basilar membrane is linked to a number of cilia. They can be viewed as receptors of the movement of the basilar membrane. With the effect of the movement of the basilar membrane, they produce a nerve impulse. These nerve impulses go through the auditory nerve, then through different areas of the brain (oliva superior, colliculus inferior, CGM, auditory cortex). The auditory cortex then processes this information.

Human beings have two auditory systems, which



enable them to locate sounds geographically. The difference in perception among the movements (intensity, start and end of the movement and its duration) of the cilia of the two basilar membranes enable humans to locate the source that is emitting sound waves.

The physiology of the auditory system is not limited to perceiving only sound. The cochlea region contains the vestibular system or the sense known as 'equilibrioception'. This system consists of three canals in the form of semi-circles. The spatial configuration of these canals is particular. It makes it possible to detect movements regardless of what direction they come from. These canals are submerged in a liquid. In the middle of these canals are a large number of cilia linked to each other by a gelatinous substance. When an individual makes a movement, certain groups of cilia carried by the movement of the liquid in the semi-circular canals move with an intensity that varies according to the movement. The difference in movements

among the different groups of cilia makes it possible to detect the direction of the movement. The acceleration or deceleration generated during a movement of position are, for their part, detected by small organs known as the utricle and the saccule. These small organs are filled with a liquid. The cilia contained in these organs are attached to a solid mass. This solid mass moves about with the effect of an acceleration or a deceleration. It returns to its initial position when that acceleration or deceleration ends. The movement of the solid mass leads to the movement of cilia and these produce nerve impulses. These nerve impulses go back up to the areas specific to the perception of movement.

This vestibular system is linked to the ocular system. It thus enables an individual to move around while keeping his gaze on a specific point. The elaborateness and complexities of these senses (auditory perception and equilibrioception) are substantial. This chapter is merely a brief overview of these systems by way of information.

2.2. The existing literature relevant to the themes

2.2a. The psychological literature.

The psychological literature on our themes is not very extensive. Psychological articles about hearing can be divided into four themes (in no particular order).

The first is the neuropsychological approach, initiated in the early twentieth century. It describes how hearing functions. Here, this functioning is tackled from a more mechanical (more anatomical) point of view. This wave of thinking was revived with the new neuroscience technologies (EEG, positron emission tomography, magnetic resonance). They make it possible to observe the cerebral zones of the brain activated when individuals perceive different types of sounds.

The second approach is based on psychiatry. Researchers attempt to understand how various pathologies work (e.g. why do some individuals perceive non-existent sounds during auditory hallucinations?).

The third approach deals with the case of hearing-impaired or even deaf people. How do they perceive sounds and vibrations? What is the impact of this deafness on intellectual development and on the development of other sensory modalities? Is this deficiency due to a deformity or a dysfunction of the inner ear (or external ear)? Or is it due to a cerebral lesion?

The fourth and final approach tackles human development through auditory perception. The importance of familiar voices to newborns, the importance of auditory stimulation: all these factors are taken into account in order to understand a child's intellectual development.

At the end of this brief presentation of the psychological literature, we can conclude that it is not relevant to our research subject. The four approaches are the main thrusts of that literature although it cannot be summed up by them alone.

2.2b. The scientific literature stemming from marketing.

Scientific literature relevant to our research subject is almost non-existent. The only relevant literature, which, unfortunately, is the subject of a number of criticisms regarding methodology, is that of the 'big brands'.

The big brands carry out studies on the different perceptive modalities of consumers (independently or in collaboration with subcontractors). Thus, for example, brands such as Harley Davidson were able to determine that 80% of the sales of their products were due to the particular noise made by their machines.

This auditory marketing is also applied to more humble consumer goods, in the food sector for instance (crisps). Some crisp manufacturers realised that making crisps which were as noisy as possible during 'tastings' had a positive impact on their sales. What is the connection between the noises made by the crisps and their sales? One big brand discovered that individuals believe that the noisier a crisp is when they bite it, the crispier they consider it to be (an essential quality for crisps in the view of a vast majority of consumers)!

This example illustrates the style of marketing literature that can be identified. All this marketing literature therefore revolves around this type of effect on the consumer. Seminal publications dealing with marketing, such as Marketing Management (by Kotler) stress the importance of taking the 5 sensory modalities into account when trying to sell a product. Unfortunately, these publications do not go into sufficient detail.

2.3. Practical application of this literature

Although the psychological literature is not extensive, we can, nonetheless, draw a few conclusions. To do this, we will be referring to the psychological literature in the broad sense initially and the marketing literature thereafter.

Human beings (and practically all living beings) fear innovation. To be more precise, they fear new perceptions, irrespective of the sensory modalities. At first glance, this may seem surprising. When we refer to our personal experiences, we are convinced that we seek novelty, as though with an insatiable thirst. Although individuals have the deep conviction that they are constantly seeking novelty, they are, in reality, in perpetual search of stimulation. What they call novelty is a variant of a familiar perception.

In order to understand this concept more fully, let us illustrate this with a multi-sensory example: 'It is necessary to meet individuals in order to expand our knowledge. When we meet a new person, at first glance, it is a novelty. In reality, we are meeting a human being, we know what this is like and we have an idea of the sounds that he or she may make'. Let us complicate the example: 'You meet a human being without legs but with six arms, who is yelling incomprehensible, piercing sounds. It is highly likely that this truly new experience will be unpleasant.' These two examples illustrate in a deliberately grotesque way that we are always seeking stimulation rather than novelty.

Applying this literature to interchanges is simple to explain but difficult to achieve. The building or renovation of these zones should be carried out using architecture that reduces noise pollution or, if that is not possible, architecture that does not distort acoustics. Understandably, an individual who is alone in a interchange and who hears unfamiliar sounds feel anxious. The intensity of that anxiety will correlate to the intensity of his or her perception. The impact is twofold: reducing noise pollution should have a positive impact on the mood of individuals (noise in metro

stations is often deafening and, in some cases, painful to the auditory system); but there is also an impact on the anxiety that these individuals feel.

One alternative solution could be to play background music in these zones. There are several reasons for this, three of which are crucial:

- Music would mask certain anxiety-triggering noises. It would cover up certain unfamiliar sounds, which would no longer be detected by the individual or would be less detectable.
- Music could avoid lowering the acoustic reactivity level. The ability to hear sounds is continually modulated. The louder the sound, the more the ear reduces the volume. If there is no sound, the ear will increase the volume in order to be able to perceive as much sound as possible. When the volume is increased due to a lack of auditory stimulation, there is a risk of perceiving more intensely the noise made by a metro train stopping or passing. But in fact we know that these noises are very piercing and can, for some users, give rise to a degree of discomfort or even some auditory pain. Playing music would prevent a complete lowering of the threshold, would partially lessen the intensity of these sounds and would therefore reduce the pain caused by the various noises in interchanges.
- We all know that music has a positive impact on mood, although this is not often mentioned in literature.

These conclusions are the result of an attempt to integrate quite substantial psychological literature and personal observations. Further research should be carried out in order to test these conclusions, assess the true importance of these effects and determine precisely their impact.

3. Olfactory perception (sense of smell)

3.1. General remarks

In contrast with hearing, sight and touch, olfaction is one of the senses known as chemical. The so-called chemical senses require the presence of a molecule or of a specific configuration of molecules to activate a specific olfactory (or gustatory) receptor. Conversely, the physiological (or even mechanical) senses do not require the presence of molecules external to the individual in order to activate a receptor. In concrete terms, the difference between physiological and chemical senses are the latency (refresh) periods between two pieces of information. Visual and auditory stimuli are perceived very quickly; their latency periods between two instances of detection are very short. The chemical senses have much longer latency periods. When an individual takes in food or inhales substances, the specific chemical receptors are activated. The molecule binds itself to the receptor, activating it for a certain period of time. It detaches itself after a certain length of time, giving a new molecule of the same type the opportunity to activate the receptor. Obviously, therefore, molecules cannot activate receptors which are already activated by other molecules and this leads to longer latency periods.

Olfaction provides two types of information: it can be pleasant or unpleasant. Most smells (80%) are unpleasant. They tell us that certain substances nearby may be harmful to the individual.

Olfaction combines with gustation (tasting) when we consume different foods. Food that smells pleasant will

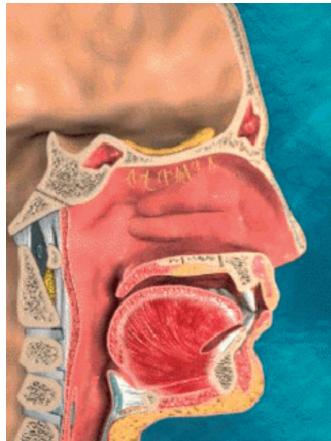
therefore be perceived as having a better taste than food with a less pleasant smell (this effect is pronounced during the first few instances of consumption).

Olfaction can be a trained skill. Some people who work with smells can distinguish from among nearly 100,000 smells. Despite this, olfaction is still a sense that is not very well-developed in humans. This limited development is due to the small surface area of the human olfactory epithelium, which measures 10 cm² compared to 170 cm² in some breeds of dog. But in fact the surface of the olfactory epithelium is directly linked to olfactory acuity. What is more, the olfactory epithelium of dogs consists of a hundred times more smell receptors per cm² than that of humans.

It is interesting to tackle another type of smell: 'pheromones'. The etymology of the word pheromone is quite interesting: pheromone comes from the combination of two Greek words: pherein (to bear or carry) and horman (to stir up or arouse). The effect of pheromones is highly developed in animals. Their effects have been widely studied and proven. But how in humans?

McClintock's work tends to prove that, like animals, humans communicate unconsciously via pheromones. The aim of these substances is to convey information, the most common relating to reproduction, identification, the marking of territory and aggressive and submissive behaviour.

When we breathe in or sniff smells, it is not our 'nose' that identifies the smells but a layer of cells in the upper part of the nasal cavity. This cavity is particular and consists of cells receptive to smells. These smell receptor cells are, in actual fact, neurones (as opposed to gustatory receptor cells). These neurones go directly up to the brain and are unusual in that they regenerate themselves every 4 to 8 weeks. So it is easy to understand how older people lose their abilities to identify smells. When it ages, the human body loses part of its ability to regenerate its cells. Fewer and fewer of these 'olfactory neurones' will be regenerated in older people and this will lead to a reduction in olfactory



perception.

As we have just seen, the upper part of the nasal cavity consists of smell-receptive neurons. But they are not the only cells in this nasal cavity. There are two other types of cells. The first secretes a mucus in the upper part of the nasal cavity. Groups of chemical molecules (smells) will dissolve there before reaching the receptor neurons. The basal cells, for their part, are at the root of the cellular regeneration of these other two types of cells.

Human beings are 'programmed' and 'trained' to perceive dangers around them which could harm their physical integrity. So it is understandable that unpleasant smells, and therefore smells that can potentially harm them, will predominate more quickly than pleasant scents. It follows that, faced with a delicate scent (perfume), the olfactory perception of it by an individual will be phased out in the presence of an unpleasant and potentially dangerous smell (such as a smell of sulphur, for example).

3.2. The existing literature relevant to the themes

3.2a. Psychological & marketing literature.

Olfaction is the least well-known of the five senses. Although the literature on this subject has been expanded upon mainly in the period from and during the nineties to date, it is still not very extensive. Olfactory perception is somewhat black and white; smells are deemed to be pleasant or unpleasant (Ehrlichman & Halpern (1988)) but are never neutral.

Smells affect human beings in two ways; they give them pleasure (directly) and modulate mood. Smells have a considerable effect on the emotional responses of an individual. Smells and other sensory modalities lead to a sort of halo effect on the judgements we make. The halo effect can manifest itself in a cognitive bias; a characteristic judged to be positive (or negative) will influence other characteristics which are independent of the first, positively (or negatively) distorting the perception that we have of those other characteristics.

The existing literature can be divided into three lines of thought:

The first line of thought is neuropsychology. It consists of the study of the cerebral zones activated during olfactory episodes. It also looks at the different interactions with the cerebral zones during those olfactory episodes. This line of thought is obviously the least relevant to our themes.

The other two lines of thought are very similar. Both cases involve the olfactory influence on human behaviour (in the broad sense). They are the psychological approach and the marketing approach. Although their aims are different, the subject of research may be the same, as psychology contributes elements to marketing and vice versa.

Although mainly psychological, this combined literature helps to give a better comprehension of olfaction and the important factors to take into consideration (when we attempt to understand behaviour attributable to olfactory perceptions).

In contrast to sight, hearing and touch, olfaction is a chemical sense (as is gustation). The chemical senses are much more sensitive to learning, to associations with events and to classic (or Pavlovian) conditioning. Thus, smells can be associated with memories. Recognising a certain smell will activate the memory and its emotion or, in some cases, simply the emotion or even only the memory.

What factors are involved in olfaction?

- The memory of smells and associated preferences.
Different smells are kept in a specific memory bank. A number of links are established with memory 'storage' zones.
- Olfactory acuity
Olfactory acuity depends on the number of olfactory receptors and on the type of organism.
- The psychological state and the level of attention of the individual.
Individuals will be affected by smells in different ways depending on the mobilisation of their attention at the moment of the olfactory perception.

This differentiation among the different constituents of olfaction was put forward very recently by Ward, Davies & Kooijman (2003).

The conscious or unconscious detection of smells depends on the above-mentioned factors. A physiological reaction may occur during an instance of unconscious olfactory detection. A person could feel fear at a smell although, consciously, he or she does not know what is behind that fear. In order to sum up the mechanisms and their interactions, we can outline them in a diagram (see appendices).

An examination of the scientific literature has made it possible to single out an article that is of paramount importance to our research subject The article by Professor Moch entitled "Odeurs et environnements urbains : le métro Parisien" (Smells and urban environments: the Paris metro) reveals crucially important demographic data.

81%	of users believe that the metro has a characteristic smell <ul style="list-style-type: none"> - basement smells (heat, mustiness, sewers) - human smells (urine, perspiration, perfume, tobacco) - smells of metro trains (burning rubber, cleaning and maintenance products)
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A distinction can be made between four demographic characteristics that help to differentiate the opinions (regarding olfaction) of users of the RATP (Paris public transport system).

Gender	
Women	<ul style="list-style-type: none"> - 45.2% have a high level of sensitivity to smells, compared to 27.9% - associate the smell of the metro with inadequate cleaning - They cite, more often than men do, human smells, which they consider unsettling and not very reassuring - mention the musty smell more often - refer more frequently to pollution-related smells, which they connect, more than men do, with health problems - Women believe, more than men do, that bad smells have an impact on health
Men	<ul style="list-style-type: none"> - refer more to smells due to rolling stock (smells from brakes)
Age	
< 35 years	<ul style="list-style-type: none"> - cite tobacco smells more often - cite smells of 'decay' more
35 to 50 years	
50 years <	
Occupation	
Workers	69% mention a harmful effect of bad smells on health
Unemployed	53% mention a harmful effect of bad smells on health
Intermediate occupations	58% mention a harmful effect of bad smells on health
The 'well-off'	40% mention a harmful effect of bad smells on health; are more sensitive to tobacco smells than the other occupational categories
Frequency of use	
Low	38% believe that the air is polluted
High	The smells of decay and mustiness are cited more when use of the Parisian metro is at a high level 51% believe that the air is polluted

The research by Moch et al. has helped to increase understanding of inter-individual differences among users of the Paris metro and, by generalisation, among users of the metro in general (with certain caveats). Olfactory perception in the metro differs according to gender, age, type of occupation and frequency of use.

Other research, where research in psychology and marketing converge, has provided very interesting findings. A few anecdotal examples can be cited:

- Women prefer to sit on a seat that emits an smell of musk although that smell is perceptible only at an unconscious level.
- Women prefer to purchase tights with a fragrant scent rather than the same tights with a characteristic smell of nylon.
- Specific smells will give rise to an increase in the speed of detecting words in relation to the smell (priming effect).
- The presence of a smell increases the number of memories. If this smell is pleasant, the person will have more pleasant memories in their mind and vice versa (Ehrlichman and Halpern 1988).

3.3 Practical application of this literature

The Moch & al article undeniably underlines the importance of the olfactory environment, even though the latter is strongly influenced by the positive or negative mental representation which users have of the metro.

We would suggest that this interaction is probably not exclusively one-way. Improving the olfactory environment of the metro would enable us to improve the overall positive impression which individuals have of it.

The literature on the subject suggests that olfactory effects can be completely subconscious. Consequently, a slight smell of cleaning product (rated positively by users when they are aware of it), that is not consciously detectable, would encourage improvements to users' "cleanliness" behaviour. A (conscious) pleasant smell would make it possible to improve the mood of individuals.

Research in neuropsychology has enabled us to establish that the cerebral areas activated during different olfactory episodes are linked to (among other things) the emotions. The diffusion of pleasant smells in metros would increase good moods (or alleviate bad moods), and would enable individuals to access pleasant memories more easily.

The conclusions above are supported by psychology literature. It is easy to understand why it is important not to neglect this human perception. However, concrete experiences are usually carried out in laboratories, and it is important to underline that the generalisation of these processes (without empirical verification), can bring up loaded questions. We cannot guarantee the success of these generalisations about the metro, as the number of variables to take into account is far too high.

There are problems vis-à-vis the application of these conclusions, regarding the cost of measurements, but also the phenomenon of incongruence. Individuals display "avoidance" behaviour when information is incongruent. Concretely speaking, this means that the individual will avoid facing situations that he or she does not understand, for example if he or she sees a pile of rubbish that exudes a delicate smell of roses. Because of its very strange nature, this sort of situation can lead to avoidance behaviour. It is important to understand that avoidance reactions can vary widely.

In order to avoid this sort of problem, the olfactory improvement of the environment must be proportional to the improvement of this same environment for the other senses. In this way, there will be congruence for the different perceptions of users, ensuring a much more effective result.

4. Tactile perception (the sense of touch)

4.1. General remarks

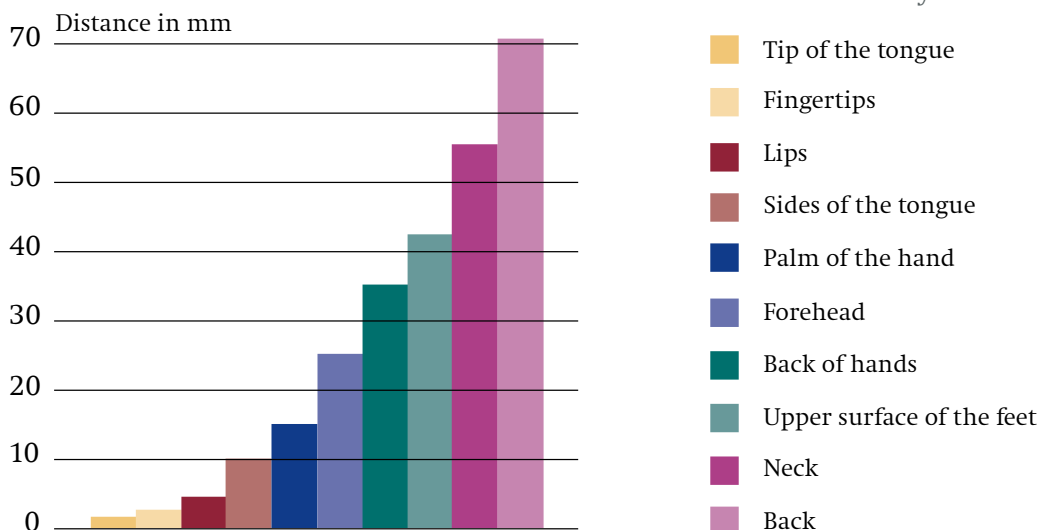
Tactile perception (the sense of touch) is actually called the somatosensory system. The skin which is directly visible to the naked eye is only the tip of the iceberg. It is made up of the epidermis and the dermis. Its main role is to protect. In fact, the skin is the first organic strategy against infections from the outside world. It also enables the body to slow down evaporation (animals in desert areas have skin, or even shells which hardly let any evaporation escape).

The sense of touch is made up of different types of mechanoreceptors, which respond to different types of stimulations. It is possible to press the skin, stretch it, prick it, heat it up or cool it down... There are specific receptors for these different types of stimulations.

These mechanoreceptors are thus preferentially sensitive to a certain type of stimulation. But we must also specify that there are two types of receptors: slow adapting receptors and fast adapting receptors. The slow adapting mechanoreceptors enable the individual to feel sensations of a longer duration

(for ex: sustained pressure) whereas those which are fast adapting enable us to feel a particular sensation (for ex. the sensation of an injection (this does not include the pain which follows, as this is a different body mechanism)). Moreover, the zones are distributed unevenly; the fingertips are very sensitive and enable the sensation of very precise feelings, whereas zones such as the back do not enable the sensation of feelings with great precision.

Distinction Parts of the body



This phenomenon (spatial discrimination) can be easily explained: in order to observe it, use a two point compass to measure the distance necessary between two points, when the compass touches the surface of the epidermis, for the individual to be able to recognise whether it is a single or double stimulation .

The two last important elements to underline with regard to these receptors are the surfaces covered. Certain receptors cover minute mm² surfaces, whereas others cover surfaces of several cm² or even tens of cm². The contrast between zones of the epidermis with hair and without hair is also

useful to sensory discrimination. Each “hair” is linked to the nervous system, which enables it to detect objects or surfaces that are close to the body. It is obvious that compared to animals, humans do not often use this detection technique. However, in animals such as cats and mice, the long rigid “hairs” on the nose enable the animal to precisely evaluate the distances between two edges when moving in narrow and/or dark spaces. As touch is one of our most extensive senses, due to the high number of mechanoreceptors which make it up, and the diversity of nerve fibres, we will not examine its advantages here.

4.2 The existing literature relevant to the research subject

4.2a. Psychological literature.

Psychological literature relevant to our subject is as scarce as for auditory perception.

This literature can be divided into four movements:

- the neuropsychology movement
- the psychiatry movement
- the developmental movement (mother-child relationship via tactile perception)
- the movement relating to tactile handicaps...

We will not go into any more detail on these movements, as they have been briefly described above.

4.2b. Marketing literature.

Scientific “marketing” literature is not to say also non-existent! We assume that some exists, but as is the case for the sense of hearing, it is probably within the context of research carried out by certain product brands, or subcontracted by certain companies.

4.3 Practical application of this literature

Despite the lack of relevant literature, we can advance several theories. We have already explained in detail the importance of mood on the perception which users have of interchanges. We can thus act on mood by means of ergonomics.

We can take action with regards to the ergonomics of “seats”. The level of material comfort must be optimised in waiting areas as well as in the metro itself. The impact of comfort can improve mood, and thus the general perception of these interchanges. Stairs leading to metros can also be improved. Steps are often too high, and cause pain and stiffness in the muscles. This pain and stiffness have a negative effect on mood and thus on the perception of these areas in general. Let us not forget the negative impact of bad tempers on aggressiveness!

5. Contribution of additional theories

5.1. General remarks

Social psychology offers a wide range of theories that can be useful. These are often of a general nature, but they offer a better understanding of human beings and how they function. This understanding can be very useful. In this chapter, we will compile the knowledge that is indispensable for the user's understanding.

5.2. Mood

Mood has often been studied or cited as an important influence on human cognition. What is the actual impact of mood? Mood exerts a strong influence on the attention of individuals. The worse their mood, the more their attention is sharpened! They perceive stimulations more rapidly, they also interpret them more rapidly, but unfortunately these interpretations often have a negative tone. To be deliberately grotesque, we could say that a bad mood makes you more intelligent, but to be more precise, we should say that a bad mood tends to increase an individual's critical faculty.

A good mood has the opposite effect: it brings down the level of vigilance, thus lowering the critical faculty of individuals. These individuals are less critical, and experience situations in a more pleasant way.

The possible link to our subject is obvious. It is essential to influence individuals in a positive way, in order to bring down their level of vigilance. These users would then be less receptive to negative elements in interchanges. The effect will be positive on mood, and consequently on the fear of crime, but also on the generation of uncivil acts.

5.3. Light

Clinical psychology teaches us that in the case of “seasonal” depression, clinicians resort to phototherapy (light therapy). In this type of depression, the virtues of light solve the problem. The impact of daylight (sun) on a good temper needs no further arguing. Certain interchanges have already

adopted openings or slots allowing a more natural lighting . The impact on the good mood of individuals would only be more positive. We will not expand on this point, as it is already well known.

5.4. Misinterpretations

As Zillman suggested in 1983 in his theory of excitation, individuals interpret certain body sensations incorrectly. For example, a man sees that he is going to miss his metro, so he runs to catch it. At this precise moment, he knows that his heart is beating faster, because he is running. He

catches his metro, and on the metro he finds himself face to face with a woman. He could think that his heart is beating faster because he feels excited looking at the woman, rather than thinking that it is still beating fast because he ran to catch his metro.

5.5. Fundamental errors of judgement

When an individual takes the journey home, and enters the metro station, he or she will perceive different elements, one of which could be that the place does not seem very clean. What will he or she think, how will he or she react? We cannot give any definite answer to these questions! But we can assume that according to literature on the subject, the majority of individuals will attribute the unsanitary conditions to unwelcome visitors (down and outs, louts,...), or to inadequate upkeep from the maintenance services. In reality, the individual should logically take into account the transition to the heart of the interchange. As a matter of fact, this transition leads to a deterioration in the salubrity of the area.

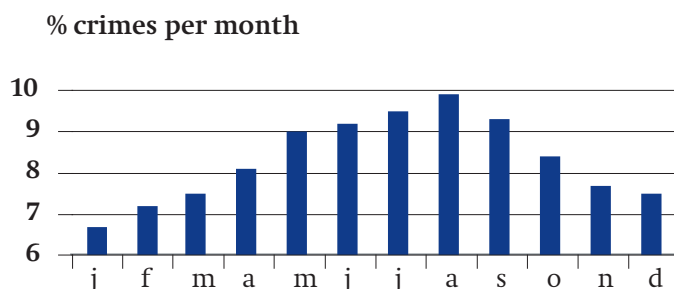
Why don't they do this?

Individuals grant an overwhelming importance to arrangement elements rather than situation elements (except when they personally are the target of criticism). Their judgements vis-à-vis the interchange would be to link the unsanitary conditions exclusively to the sort of persons frequenting (arrangement element). “The metro is dirty because it's full of riffraff!” The correct judgement would be to take into account the large number of people passing through the interchange, and who necessarily bring about an abundance of filth (situation element)! “The metro is dirty because a lot of people pass through it!”. Unfortunately, we cannot act on this type of judgement, as these errors are very frequent and take many different forms which cause a lot of inconvenience in our daily lives.

5.6. Heat and its impact on crime

Statistics indicate an increase in the number of crimes (murders, attacks, rapes, family violence...) during the hotter months. The graph below shows the extent of the effect.

The interpretation of this graph allows us to conclude that controlling temperature in interchanges during times of intense heat could have a positive impact on reducing aggressive behaviour (this effect would, at most, amount to a few percent). This is a theoretical interpretation, a study will have to be carried out in order to establish the validity of this premise.



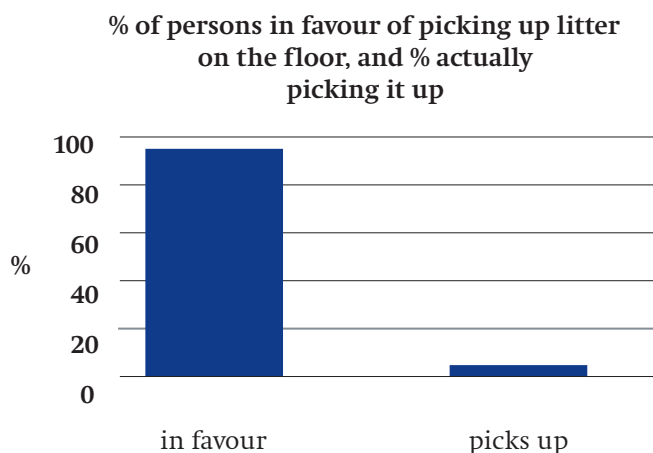
5.7. Weapons

The works of Berkovitz (1967) indicate the perverse effects of the presence of weapons. In fact, the presence of weapons in an environment leads to an increase in aggressiveness (at a behavioural level), which increases even if there is no link between the weapons and the individuals. Berkovitz's

work enables us to understand the potential risks of arming security teams in interchanges. The presence of weapons would probably have an impact on aggressive behaviour. In view of these works, it would be beneficial, as a preventive measure, to avoid making these weapons visible in interchanges.

5.8. Prevention for cleanliness

Almost all individuals uphold the fact that it is harmful to throw litter, and that it is beneficial to pick it up! However, many people behave in a way that is contradictory to their attitude. This is shown in Bickman's works (1972):



This conclusion shows that prevention campaigns do not work. A basic question can be drawn from this: “Why are more than 90 percent of individuals in favour of picking up litter, and only 3% of them actually do pick up litter?”

This observation/question proves that there is a weak link between behaviour and attitude (with regard to this behaviour). This weak link is due to the presence of a general attitude and specific behaviour. In order to increase the percentage of persons picking up litter or simply not throwing them on the floor in the first place, we can induce a hypocrisy situation (see Festinger's works on cognitive dissonance). We will not go further into this type of process, because it appears to be too difficult to apply out in the field. We can turn towards other solutions which enable us to reinforce the link between attitude and behaviour. We can thus increase self-awareness.

In order to increase an individual's self-awareness, there are different procedures, only one of which could be easily carried out in the context of our subject.

The first process (not applicable to our themes) consists in asking individuals to think about their attitudes. It is obviously impossible to ask each user to do so. It would be possible spread this message to users by means of billboards. The main problem with this solution rests in the fact that in the medium and long term, these billboards will no longer be noticed. Market research shows that advertising via billboards, posters etc is not very effective. The reason that this type of advertising is still used is its low cost. This is one of the least effective methods of spreading a message.

The second process, which is applicable, is to increase users' self-awareness. In order to do this, we can place a considerable amount of mirrors in stations, thus “forcing” users to see themselves. In fact, when an individual looks at himself in the mirror, he cannot avoid but judge himself, he or she wants to love the reflection which the mirror shows him/her. Individuals will thus be more aware of protecting the environment, and will do so for two reasons:

- They don't want to see themselves littering.
- They don't like to see in the mirror a person who is not very respectable, this would give him a low self opinion. One of the main needs of individuals is to protect his self esteem.
- We can conclude that it is unsatisfactory to see yourself behaving badly. This process can also be effective for other types of incivilities.

6. Warning

This advice has been adapted from literature on the subject: in certain cases, this is a direct transposition, in other cases, this is a reflection on to this literature. It is important to underline that further research will have to be carried out in order to validate the conclusions, in particular in order to measure the actual effect in these practical situations!

7. Conclusions

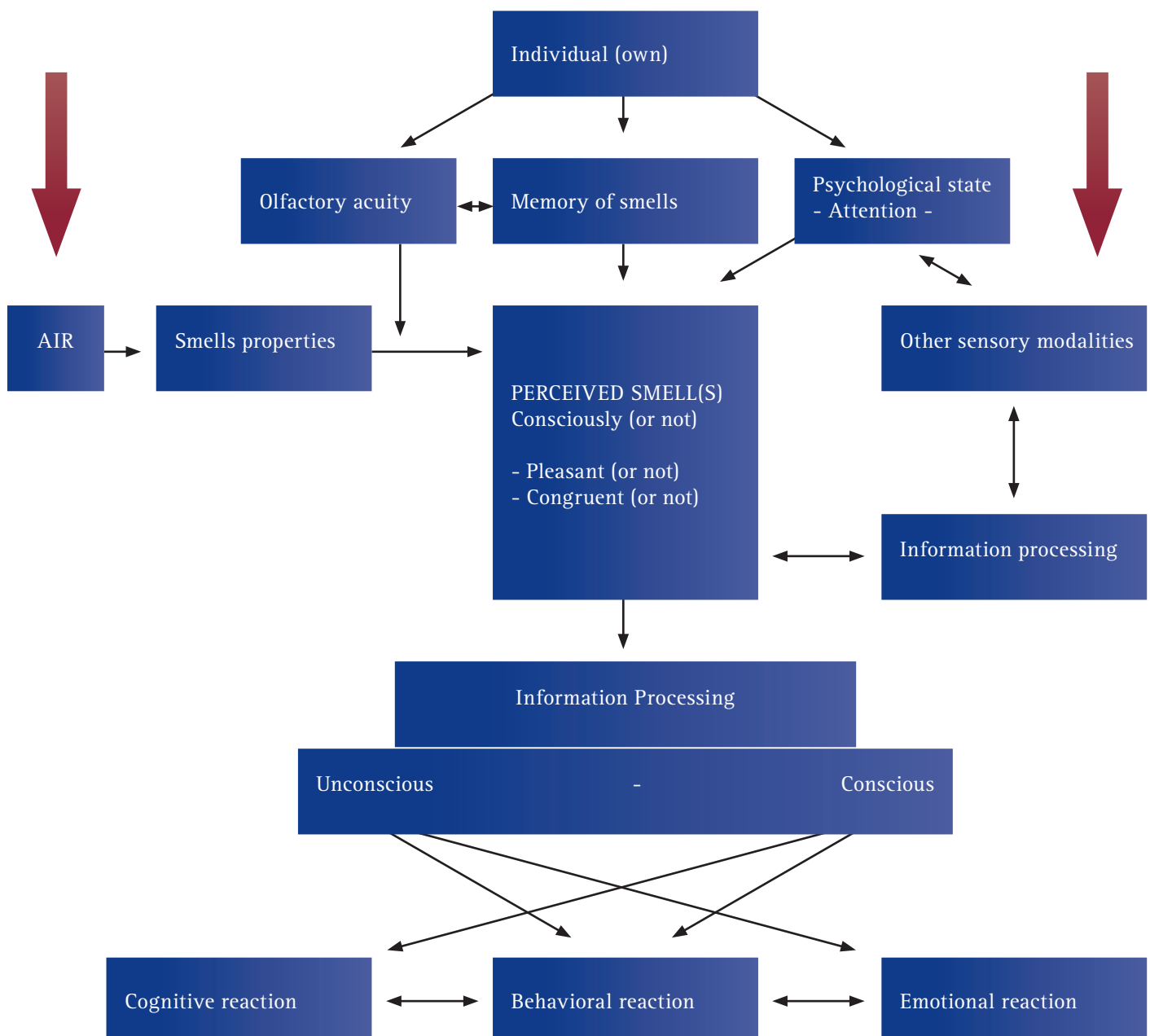
At the end of this report, we can draw certain conclusions. Scientific literature on auditory perception and tactile perception is not extensive. Very little of this literature covers our subject, but a solution to this problem could lie with company literature (private research carried out by firms). This research cannot be consulted, for the obvious reason that we do not have access to it!

Although they are not extensive, some conclusions can be taken into consideration. The improvement of human perception, whether visual, auditory, tactile or olfactory, must be carried out together. In fact, perceptive incongruence could lead to effects which are the opposite of those hoped for.

In conclusion, the improvement of the different sensory modalities will undoubtedly have a positive impact on mood, which will in turn reduce both the fear of crime for users and the incidence of uncivil acts. It is obvious that a substantial improvement to all sensory perceptions will lead to a measurable improvement, but will certainly not be a cure-all. The best solution lies in a multifactorial approach to the problem, as it is intrinsically made up of many different factors.

8. Appendices

The red arrows represent the possible places of action.



References

- Mark F. Bear & al, Neurosciences, Ed. édition Pradel, (2002)
- Kotler, Dubois, Marketing management, Ed. Pearson Education (2004)
- Ajzen, I. The theory of planned behaviour. *Organizational Behaviour and human Decision Processes*, 50, 179-211.
- Anderson, C.A. (1989) Temperature and aggression: The ubiquitous effects of heat on the occurrence of human violence. *Psychological Bulletin*, 106, 74-96.
- Psychologie Sociale*, Jacques-Philippe Leyens & Vincent Yzerbyt, (1997), Mardaga.
- Berkowitz, L. & Lepage, A. (1967). Weapons as aggression-eliciting stimuli. *Journal of Personality and Social Psychology*, 7, 202-207.
- Bornstein & al (1987). The generalizability of subliminal mere exposure effects: influence of stimuli perceived without awareness on social behaviour. *Journal of personality and Social Psychology*, 53,1070-1079.
- Festinger, L. (1957) A theory of cognitive dissonance, Stanford, CA: Stanford University Press.
- Higgins, E.T (1996). Knowledge activation: Accessibility, applicability, and salience. In E.T. Higgins & A.W. Kruglanski (Eds), *social psychology: Handbook of basic principles*. New York: Guilford.
- Lewicka, M. (1988). On objective and subjective anchoring of cognitive acts: How behavioural valence modifies reasoning schemata. In W.J. Baker, L.P. Mos, H.V. Rappard & H.J. Stam (Eds), *Recent trends in theoretical psychology* (285-301). New York : Springer-Verlag.
- Schwarz, N & Clore, G.L. (1988). How do I feel about it? Informative functions of affective states. In K. Fiedler & J. Forgas (Eds), *Affect, cognition, and social Behaviour*. Toronto: Hogrefe.
- Chen, (2000). Human olfactory communication of Emotion, Perceptual and Motor Skills.
- Moch, (1997). Odours and the Urban Environment, The Paris Subway. *Psychologie Française*, vol 47(2), 175-182.
- Diener, E. (1980). Deindividuation: The absence of self-awareness and self regulation in group members. In P. Paulus (Ed), *The Psychology of group influence* (209-242). Hillsdale, NJ: Erlbaum.

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