Assessing the vulnerability of targets for burglary. Creating a multi-level observational instrument

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Assessing the vulnerability of targets for burglary. Creating a multi-level observational instrument.

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Many empirical studies on burglary focus on environmental characteristics, more specifically on non-observable factors like residential mobility and income. However, since burglars cannot observe these characteristics, why would they use them in the target selection process? Environmental research mostly looks at the macro level, the neighbourhood, or the micro level, the house. The meso level, the street, has been researched less often. A gap in previous research lies in the combination of multiple levels. The interaction effect between the neighbourhood, the street and the house has hardly been researched, while all these levels are taken into account when a burglar selects a target. This paper addresses the construction and pilot test of an observational instrument at neighbourhood, street and house level for the observation of stable environmental factors. The instrument presented in this paper can be used in further research to examine the influence of environmental characteristics on target selection by burglars.

1. Introduction

Target selection by burglars

How burglars select their targets has been the topic of much research. There are three main lines of research that have attempted to identify predominant factors which influence burglary target selection. The first line focuses on the role of socio-demographic factors as macro-place targets like income, residential mobility and ethnicity. Results show that the proportion of minorities (Shover, 1991), the density of the population (Tseloni, Wittebrood, Farrell & Pease, 2004) and the deprivation or affluence of the neighbourhood (Mawby, 2001) influence burglary rates.

The second line of research utilises self-reports from burglars on micro-characteristics of suitable targets for burglary. This provides valuable information on visible characteristics that influence the selection process (Nee & Meenaghan, 2006; Verwee, Ponsaers & Enhus, 2007). The third research line that sheds light on burglary target selection relies on the observation of properties and the streets on which they are located. Observational research looks at characteristics of houses and their environment, and their influence on crime and burglary (Armitage, Monchuk & Rogerson, 2011).

Although these bodies of research provide valuable insight into factors that influence burglary target selection, there are some limitations. Research that uses secondary databases on income and residential mobility gives insight into general characteristics of the environment that influence target selection, but is distant from the burglar on the street. A burglar does not say he has chosen a certain neighbourhood because the level of social cohesion seemed low (Bennett & Wright, 1984a). Instead, burglars mention visible, observable characteristics (Nee & Meenaghan, 2006; Verwee et al., 2007). Interview and observational research stays closer to actual target selection on the micro level, though rationalization during an interview may reveal characteristics that are not taken into account when searching for a target (Cromwell, Olson & Avary, 1991; Walsh, 1986). A limitation of observational research is that one cannot be certain that what a researcher observes is the same as what a burglar sees. When observational research was tested with householders, they appeared unaware of a range of

cues a burglar uses to choose a preferred house (Nee, 2003). Burglars walk around the streets, deliberately or subconsciously observing the environment looking for a suitable target. This search can be purely observational, or partly based on knowledge about behaviour or the activities of residents. Ninety-two per cent of burglars do some form of planning. While young burglars and addicts find preparation less important, they do say environmental characteristics are essential in target selection (Verwee et al., 2007).

The environmental features consist of stable (fixed) and unstable (changeable) characteristics. Stable characteristics are more often related to characteristics of places than characteristics of people (Weisburd, Groff & Yang, 2012). Stable characteristics include physical characteristics of the properties like the type of dwelling and fencing. Unstable characteristics refer to variable features which are mostly indicators of occupancy such as whether or not the lights are on, or whether there is surveillance by neighbours or the police. While unstable characteristics influence the target selection process, they are extremely difficult to observe after a house has been burgled. If unstable factors like locks are included in an observation, this might lead to the conclusion that houses which have been burgled have more locks than those which have not. Since the timing of the installation of the locks is unknown, this conclusion might not be valid because - and this is a real possibility - the locks may have been installed after the burglary took place. The situation at the time of the burglary remains unknown. Therefore unstable factors are difficult to study by observational research if that research is not conducted at the time of the burglary.

When looking at environmental features in criminal location selection, it is not just the house that is important. The combination of cues on one property is related to the neighbouring properties (Nee, 2003). As such, the target selection process can be seen as a spatially structured, hierarchical, sequential choice process (e.g. Vandeviver & Van Daele, 2012; Brantingham & Brantingham, 1984; Kleemans, 1996). This means that the target choice is made at several levels. It starts with the selection of an area with which the offender is familiar. This area can be a neighbourhood. In this neighbourhood the offender chooses a suitable street, followed by the selection of a suitable house (Kleemans, 1996). The smaller the level, the more details are included in the decision (Bennett & Wright, 1984a). This sequential choice perspective is adopted by many, and the importance of research on multiple spatial levels has been stressed before (Trickett, Osborn & Ellingworth, 1995; Tseloni, Osborn, Trickett & Pease, 2002). Lynch and Cantor (1992) included neighbourhood, street and house levels in their research on target selection. They found proof of the sequential choice process, and that several opportunity variables affect the risk of burglary victimisation. There has been little further research integrating these multiple spatial levels.

Limitations

The limitations of previous research - these limits being the use of only secondary data or the inclusion of unstable characteristics and the absence of research on multiple levels - create a gap in current knowledge on target selection. This gap provides the rationale for the current study on burglary target selection. Since observational research stays close to the selection process of the burglar, an observational method was chosen. The issues related to observing unstable factors argue for the exclusion of unstable variables. Since a burglar takes aspects of multiple levels into account, this study also includes neighbourhood, street and house level characteristics.

The research project uses a multi-level approach, through which houses, their streets and neighbourhoods are observed by the use of an observational instrument. The goal is to conduct about 2,000 observations in the city of Ghent. Police data on burglary are available for Ghent. Half the houses which will be observed had been burgled - or had a burglary attempt - in 2010. By comparing environmental characteristics, this research hopes to shed some light on the influence of environmental characteristics in target selection by burglars. But before large scale observations can be conducted, an observational instrument is required.

From previous research many instruments are available, but an instrument to conduct observations at neighbourhood, street and house level does not exist. For example, Reynald (2009) created a property observation checklist. The items on this list include for example parking facilities, surveillance and graffiti. The instrument is mainly focussed at the property level, and less on its environment. There are also observational instruments and checklists that look at both the property and the street it is in (Armitage, 2006; Armitage et al., 2011; Perkins, Wandersman, Rich & Taylor, 1993). But still, the neighbourhood is left out of observational instruments. The property and street items addressed in these instruments are adapted into a new instrument, which is comparable in structure and observed characteristics on all three levels. This paper focuses on the construction of this observational instrument. The instrument will be used in future research to conduct the observations required for the project on burglary target selection. This paper considers the following research question: 'Is it possible to create an observational instrument based on existing literature to measure stable neighbourhood, street and house characteristics?'

The first step is to determine what needs to be included in the instrument. The next section of the paper presents an overview of those theories related to target selection. This is followed by a section which summarizes relevant research on target selection, from which the observational instrument has been created. The second step was to pilot test the instrument in Ghent, which led to some improvements in the instrument. To conclude, the final observational instrument on neighbourhood, street and house level is presented. This instrument can be found in the appendix.

2. Theoretical framework

When looking at target selection, several theories seem relevant. The sequential choice model of target selection is in line with the routine activities perspective, where a target for crime is selected in one's daily, non-criminal routine. For a crime to occur, the presence of a motivated offender needs to come together with a suitable target and the absence of a capable guardian (Cohen & Felson, 1979). Burglars choose their targets from within their own routine activity space when walking around on the street (Brantingham & Brantingham, 2008). This routine does not only include the house, but also streets and neighbourhoods.

According to the rational choice perspective, the only determinant for crime is whether the costs exceed the benefits. When the costs of crime outweigh the benefits, the offender will make a rational decision not to offend (Cornish & Clarke, 1986). The factors that influence this selection can be found in different fields. These fields can be related to the area, like accessibility, or the time it takes to get there, or to the house, like occupancy and security measures (Hamilton-Smith & Kent, 2005).

In a neighbourhood or street where the land use is diverse and the streets are accessible, one can expect many people. These people traverse the neighbourhood in their daily, non-criminal routine and this provides possibilities to spot a target. The defensible space theory also finds

that the fewer strangers reside in the area, the lower the chance of burglary. Since there are only a few strangers around, it is possible to keep an eye on the strangers in the area who can be potential burglars (Newman, 1972).The previous theories relate there being a large number of people to high levels of crime. On the other hand, the space syntax model states that a lot of people on the street reduce the chance of burglary since the number of potential guardians is large (Hillier, 2004).

Newman's theory on defensible space focuses besides accessibility and control on territoriality. Territoriality is the extent in which the space is public or private, and whether a potential offender will be willing to cross to the private area to commit a crime (Newman, 1972). This distinction between public and private can be made by for example fencing. This keeps possible criminals out. Although fencing is related to territoriality, the type of fencing is also related to the guardianship principle of the routine activities theory. The guardianship principle is developed further in Reynald's guardianship theory. Not only the presence of guardians is important, but also whether they can exercise this guardianship. Whether these guardians are capable of monitoring the environment is related to visibility. When a guardian is present, but not able to see neighbouring houses, the guardian is not a capable guardian (Reynald, 2010). By looking at fencing around the house, and the visibility of the neighbours, this capable guardianship can be addressed.

Another theory related to crime that looks at environmental characteristics is broken windows theory (Wilson & Kelling 1982). This theory states that the more decay, like garbage and graffiti, is present in the streets, the bigger the chance of further deterioration, which might lead to crime. Decay also includes maintenance of the houses themselves, and how affluent the environment of the house looks. Furthermore, this affluence is related to rational choice theory, where a maximum profit against the least effort is pursued. The more affluent the house looks, the higher the expected benefits and the larger the chance a house will be burgled. This shows that the different theories can be linked.

From these theories, many relevant characteristics for target selection can be distinguished. In the next section of the paper, existing research will be presented. This will help to determine which characteristics need to be included in the instrument and which need not. First, the neighbourhood level will be discussed, followed by the street and finally the house level.

3. Characteristics from previous research

Some characteristics presented in the theories are relevant at more than one level. An example of this is visibility - whether people have a clear view of the houses around them or not. Visibility, which is mostly a house characteristic, is also relevant at the street level. If all the houses in the street have high fencing, the visibility is low, even for the one house that does not have high fencing. Therefore, a visibility question is added at street and at house level, but it will only be explained at the level that comes first, the street level.

Neighbourhood

Wealth and maintenance

Many neighbourhood characteristics are quite abstract, and therefore difficult to observe. For example, some scholars find no difference in burglary chances between wealthy and deprived neighbourhoods (Bernasco, 2006; Wright, Logie, & Decker, 1995), while burglars said they

prefer affluent properties (Rengert & Wasilchick, 2000). Wikström (1991) finds that burglary occurs disproportionally in areas of high socio-economic status, but others have argued that burglary rates are higher in deprived areas (Bernasco, 2009; Mawby, 2001; Millie, 2008). When multiple levels are included, prosperity at the house level seems to increase crime rates, while the wealth of an area decreases it (Tseloni et al., 2002). That affluence has an effect on burglary chances seems clear, though how it influences burglary chances is disputed. How wealthy the neighbourhood, street or house looks is included here, measured by a question about the amount of affluent houses.

Signs of wealth related to maintenance seem to influence burglary risk (Wright & Logie, 1988). Related to this is how the neighbourhood looks. Wilson and Kelling (1982) found that the look of a neighbourhood is important for the level of crime; visible decay and disorder can cause crime. Physical disorder is seen in graffiti, litter and housing abandonment or bad upkeep (Gesthuizen & Veldheer, 2009; Wilson & Kelling, 1982). Different types of physical disorder significantly increase burglary risk (Lynch & Cantor, 1992; Weisburg, Groff & Yang, 2012) and dilapidation of buildings is connected with high crime rates (Stark, 1987). While Rengert and Wasilchick (2000) stated that the neighbourhood should be maintained well to prevent crime, others have discovered that a well-kept garden increases burglary chances, and unkept paintwork reduces it, potentially being related to how affluent the house looks (Wright & Logie, 1988). On the other hand, Perkins et al. (1993) find no relation between incivilities and crime and delinquency and Sampson and Raudenbush (1999) discover only a limited correlation between physical disorder and police recorded burglary. There does not seem to be an agreement on the direction of the influence of maintenance on burglary chances. Since decay seems to have an influence, these characteristics will be measured at all levels. To measure maintenance, the overall level of cleanliness (litter, graffiti, vandalism), how well the houses and gardens are maintained and the number of abandoned buildings are observed, using among others the questions below.

How many of the houses in the neighbourhood…

	None			**Half**			**All**
are well maintained	☐	☐	☐	☐	☐	☐	☐
have maintained paintwork	☐	☐	☐	☐	☐	☐	☐

How often do you see … in the neighbourhood

Garbage / litter small	None	1-10	11-20	21-30	31-40	41-50	> 50
Garbage / litter large	None	1-10	11-20	21-30	31-40	41-50	> 50
Graffiti small	None	1-2	3-4	5-6	7-8	9-10	> 10
Graffiti large	None	1-2	3-4	5-6	7-8	9-10	> 10
Signs of vandalism	None	1	2	3	4	5	> 5

Type of buildings and facilities

Kleemans (1996) and Groff and La Vigne (2001) point to mixed land use as another factor that influences burglary chances. When a neighbourhood only has a residential function, few strangers reside in the area. This leads to a low number of potential burglars, and a high level of territoriality. Neighbourhoods that have more commercial activities (Lynch & Cantor, 1992) and less non-residential properties (Perkins et al., 1993) have higher burglary chances. On the other hand, recent research finds that that there is no relation between mixed land use

and crime (Weisburd et al., 2012). It is interesting to know whether the neighbourhood is exclusively residential, or if there are facilities like shops, parks and industry present. Mixed land use also seems linked to higher rates of physical and social disorder (Sampson & Raudenbush, 1999). Facilities, even when they are not measured very accurately, show an influence on the community (Gesthuizen & Veldheer, 2009). Several attraction variables mentioned in literature are included, as well as a question regarding land use in the neighbourhood and street. At the house level, land use is measured by asking what type of building is situated next to the house, and what the distance to this building is.

Is this service available in the neighbourhood?

Library	o Yes	o No
Police station	o Yes	o No
Hospital	o Yes	o No

Land use in the neighbourhood (4 = As much residential as commercial)

1 2 3 4 5 6 7

Only residential Only commercial

The last factor to take into account at the neighbourhood level is the type of houses. Neighbourhoods with a high percentage of single family houses are more attractive to burglars than neighbourhoods with many apartment buildings, probably since houses are quite accessible compared to apartments (Bernasco & Nieuwbeerta, 2005). Whether there are many single family houses or apartments is included in the instrument at both the neighbourhood and street level.

Street segment

Street infrastructure

At the street level, Newman (1972) finds that the type of street influences the chance of burglary. Whether a street is a regular street, a dead end street or a cul-de-sac[1] is important. Streets and neighbourhoods become more vulnerable as accessibility increases (Beavon, Brantingham & Brantingham, 1994; Hakim, Rengert & Shachmurove, 2001; Taylor, 2002) and when they are easy to pass through (Bevis & Nutter, 1977). Burglary rates are higher when footpaths are present (Bernasco, 2006). Although cul-de-sacs experience a lower burglary rate than other streets (Johnson & Bowers, 2010), so called leaky cul-de-sacs[2] are the least safe design of residential housing (Armitage et al., 2011). These factors are added to the instrument in the following manner.

Type of street

- o Dead end street
- o Cul-de-sac (dead end street with a circular 'bag' on the end)
- o Leaky cul-de-sac (footpaths provide access to the dead end street)
- o Cross street

Number of connecting footpaths / alleys (not included the streets)

0 1 2 3 4 4+ connecting footpaths / alleys

[1] A dead end street with a circular area at the end which allows cars to turn around.

[2] As above, only with footpaths connecting the cul-de-sac to other streets.

Alongside the type of street and the number of footpaths, road networks and traffic flow are also related to accessibility. Accessibility of a street can be measured by the number of side streets that enter the street, and traffic flow by scoring the type of street, for example whether it is a feeder or a minor artery (Beavon et al., 1994). Accessibility is included in the instrument with a question on the number of connecting streets and the type of street. Furthermore, some other traffic flow questions are included, like whether vehicular traffic is allowed and whether the street is a one way street or not.

The width of the street is important for accessibility and for surveillance as well. Even by 1980, Cohen (in Anselin, Cohen, Cook, Gorr & Tita, 2000) notes that wide streets enhance crime. Another factor that is related to accessibility is public transport, which increases the chance of burglary (Groff & La Vigne, 2001). Therefore, the width of the street and the number of public transport lines that pass through the street are observed.

Type of street (1)

- Mostly local traffic
- Small through traffic within a neighbourhood
- Medium through traffic between neighbourhoods
- Large through traffic between cities / villages
- Highway

Width of the street

½ 1 1½ 2 2½ 3 3½ 4 4+ cars wide

Visibility

Besides accessibility, detectability or the presence of cover is important when choosing a target. Any obstacle, like high shrubbery or fencing, which reduces the view of the house and the front door increases the chance of burglary (Bennett & Wright, 1984b; Chula Vista Police Department, 2001; Hamilton-Smith & Kent, 2005; Wright & Logie, 1988). In general, more cover that reduces visibility from the street towards the house increases burglary risk (Palmer, Holmes & Hollin, 2002; Shaw & Gifford, 1994; Taylor & Nee, 1988). Burglars avoid houses with adjacent house visibility (Brown, 1985), if the entrance of the house is visible to neighbours across the street (Bennett & Wright, 1984b) and mention shrubbery as a place to hide (Rengert & Wasilchick, 2000). Cromwell et al. (1991) and the Chula Vista Police Department (2001) confirm the influence of fencing, and mention that to reduce burglary, cutting a high fence to a maximum of 1 or 1.2 metres is the best tactic.

To measure visibility, the percentage of houses with high (more than 1.6m) fencing and the visibility between houses are observed, as well as the number of buildings and visible front doors, since they might influence visibility. At the house level, fencing questions are specified including the height of the fence and its transparency, since solid fencing seems to facilitate successful burglaries (Chula Vista Police Department, 2001).

How many of the houses in the street have high fencing (1.6 meter or higher)

None			Half			All
☐	☐	☐	☐	☐	☐	☐

Fencing present around the house

- No
- Yes, low fencing (sitting height)
- Yes, medium fencing (easy to look over)
- Yes, high fencing (1.6 meter to 2 meter high)
- Yes, fortressing (> 2 meter high)

A final factor that is found in research is the way cars can be parked. Houses with garages are the least vulnerable to burglary (Armitage et al., 2011; Cromwell et al., 1991) and houses with an open carport have a higher burglary risk, since it is easier to observe whether there is someone at home (Cromwell et al., 1991). Therefore a question on how a car can be parked is included at street and house level.

How can a car be parked at this house (multiple answers possible)

- On the driveway / carport
- In a garage beside the house
- On the street
- Separate parking lot in the street
- Other, namely …

House

Physical and symbolic barriers

The final level that is included is the house level. Burglars often make the choice to burgle a house when they are on the street (Bennett & Wright, 1984b), making factors that can be seen from a distance the most important (Winchester & Jackson, 1982). Whatever a burglar encounters when he or she gets closer to a house hardly affects the previously made decision to burgle. Therefore, security measures that cannot be seen from the street seem relatively unimportant (Cromwell et al., 1991; Wright et al., 1995). The number of alternative entrance points might be related to this (Cromwell et al., 1991). Some security measures are visible from the street, for example an alarm system, a camera or a dog.

An alarm system can decrease the chance of burglary (e.g. Hakim et al., 2001; Nee & Meenaghan, 2006; Wright et al., 1995) and some burglars find it important to take into account when selecting a target (Garcia-Retamero & Dhami, 2009; Verwee et al., 2007). But there is only little evidence of their effect (Pascoe & Lawrence, 1998); this might be due to the high level of false alarms (Poyner & Webb, 1991). Poyner (1993) mentions that the presence of cameras can affect crime, though other research finds it has only limited influence (Hamilton-Smith & Kent, 2005; Verwee et al. 2007), just like motion sensor lights (Verwee et al., 2007). An alternative factor that is sometimes mentioned as a deterrent for burglary is the presence of a dog (Nee & Meenaghan, 2006; Verwee et al., 2007; Wright et al., 1995), while others state that dogs do not deter burglars (Buck, Hakim & Rengert, 1993; Cromwell et al., 1991; Logie, Wright & Decker, 1992). Signs of dog presence, like a dog house or a 'Beware of the dog' sign are also considered security measures. Security bars and barricades can

reduce burglary, though it seems that they at best reduce the aesthetic value of the property (Schneider & Kitchen, 2007).

Which security measures precisely work is not agreed, but evidence shows that target hardening generally works (Nee & Taylor, 1988). Houses without security measures have the greatest burglary risk (Millie, 2008). Therefore different types of security measures are included in the instrument.

Visible security measures present (multiple answers possible)

- ☐ No
- ☐ Yes, alarm system
- ☐ Yes, security camera
- ☐ Yes, climb in security pins at windows or roof gutter
- ☐ Yes, sign of dog presence, namely …
- ☐ Yes, other namely ….

Besides the physical barriers raised by security measures, there are symbolic barriers that can influence burglary risks through territoriality. Non-burgled homes have more signs of ownership than burgled homes (Brown, 1985). This is included by observing the amount of flowers and the presence of welcome mats or lawn furniture. Also related to territoriality is the distance to the road, which influences burglary chances (Bennett & Wright, 1984b; Cromwell et al., 1991). If there is an area between the road and the house, this is either garden, or another ‘private area'. These territoriality factors are added.

Type of house

Another characteristic that can influence burglary is housing type (Kleemans, 2001). Detached houses have the highest burglary risk (Taylor & Nee, 1988), followed by semi-detached, corner and terraced houses. High-rise buildings have the lowest burglary risk (Kleemans, 1996). This might be connected to the accessibility of the houses (Bernasco & Nieuwbeerta, 2005).

Houses on the corner of the street have a higher chance of burglary (Groff & La Vigne, 2001; Hakim et al., 2001; Rengert & Wasilchick, 2000), supposedly because they offer more possibilities for escape (Rengert & Wasilchick, 2000), or that visibility by neighbours is blocked (Brown, 1985). Cromwell et al. (1991) also found that burgled residences were significantly more likely to be in sight of traffic lights. Stopping at a traffic light gives a burglar the opportunity to observe a potential target, thereby increasing the burglary risk of houses in sight of traffic lights. These risk factors are included in the instrument.

Type of dwelling
- Detached house
- Semi-detached house
- Row house
- High rise building
- Other, …

Is the house a corner house
- Yes
- No

4. The instrument

The literature review above has led to an observational instrument at the neighbourhood, street and house levels. A large variety of factors is included in the instrument. At the neighbourhood level, these are factors concerning affluence, maintenance, decay and land use. At the street level the same characteristics are included, supplemented with questions about the type of street, accessibility, public transport, visibility and parking. At the house level questions are added about security measures and the type of house. Together they form an observational instrument of stable neighbourhood, street and house level characteristics that, according to previous research, influence burglary target selection.

Before testing the instrument, the units of analysis need to be defined. The first is the neighbourhood, using standard NIS (National Institute for Statistics, Belgium) classified neighbourhoods. These classifications are determined based on population data and they are quite homogenous. By using this classification, future linking with available socio-demographic factors remains possible. The second unit is the street segment[3], which is a part of a street from one side street to the next side street. In some cases this will mean the whole street is part of the street segment, in others only a part[4]. Therefore a clear definition of what is classified as a street is needed; everything wider than four meters, including sidewalks is a street; everything narrower is an alley. If a street segment is part of a square, the whole square is part of the street segment. The other side of the square is the other side of the street segment. The final unit of analysis is the house. All addresses in Ghent are stored in a database, of which a random sample of addresses was drawn. The observed houses are the exact addresses that are derived from this database.

Methodology

Based on the literature review above, an observational instrument has been created. To determine whether the characteristics in the instrument can be observed, whether multiple observers come to the same result and whether adaptations in formulation or answer options are needed, the instrument has been tested. The pilot test was done on ten houses in Ghent, five in the city centre and five on the outskirts of the city. These two locations are chosen since there are different environmental characteristics present in the city centre and the

[3] Street and street segment are used interchangeably.

[4] When a street starts at a square, and continues until a T-crossing the whole street is the street segment. When there is a side street somewhere between the square and the T-crossing, the street has two street segments, one from the square to the side street and one from the side street to the T-crossing. The properties on both sides on the street are included. This is the same method as was used by for example Perkins et al. (1993) and Weisburd et al., (2012).

outskirts of the city. Observing both makes it possible to test the full range of the instrument. All levels were observed; this means that the houses, their street segments as well as their neighbourhoods were observed. The pilot test was conducted by eight observers, colleagues at Ghent University. Each location was observed by five people[5]. This leads to a total of 50 house observations. Since the goal of this pilot was to determine the reliability and clarity of the instrument and not the influence of the environmental characteristics on burglary, this number is large enough. Six observers performed the observations by bike, one by scooter and one by car.

Since burglars might be more sensitive to some environmental characteristics related to burglary target selection than the observers, the instrument is based on previous literature on burglary target selection. By using the same factors burglars said they take into account, the observations can stay closest to the actual target selection of the burglar. The results of the pilot were analysed using SPSS. Inter-rater reliability analysis was conducted on all variables, using intra-class correlations. Ideally, the outcome of an intra-class correlation is an alpha above 0.8, but an alpha above 0.6 is generally accepted (Bijleveld, 2007). Due to the small number of observations in this pilot, an alpha of 0.7 is desired, though some leniency is taken into account. After the pilot test, the instrument has been adapted and clarified based on the results. The improved instrument was tested again by three observers, to make sure the instrument is ready for large scale use. The following section presents the most important results of both pilots. Unless otherwise specified, the alpha presented is from the second pilot.

5. Results

Neighbourhood level

At the neighbourhood level, Pilot I showed that there were problems with abstract variables like affluence and maintenance. Perceptions of whether a house was ‘affluent', and ‘maintained' were not consistent across raters. These variables were then clarified by, for example specifying when a house is maintained[6], which improved the reliability of maintenance of paintwork to 0.840 and the maintenance of the neighbourhood to 0.744. Affluence and the maintenance of the houses both improved to 0.676.

The land use in the neighbourhood (0.733) and whether houses are detached or not (0.979) were reliable, like the questions on which facilities are present. The type of dwelling was not reliable in Pilot I. This question asked about the distribution between single family houses and ‘apartment blocks', while ‘apartments' would have been better since it also includes apartments in row houses. The change to ‘apartments' improved reliability to 0.804.

Regarding the questions about ‘decay', counting items of decay seems problematic. There was more garbage lying around than expected, leading to a small variance in scores[7]. The garbage question has been adapted to a more abstract answer option, rating from ‘none' (1) through ‘some' (4) to ‘a lot' (7) of garbage. For graffiti, the answer options were broadened. Instead of

[5] Three observers observed the city centre and three the outskirts. Two observers observed both locations.
[6] All clarifications can be found in the full instrument that is attached.
[7] On the other hand, two observers scored no decay. This could have been due to the fact that they observed by car or scooter, thereby seeing less than on foot or by bike. The mode of transport seems to influence the results; therefore, all further observations will be conducted on a bike.

a maximum score of >10 graffiti, it was changed to >50. This improved reliability of decay factors in Pilot II[8], in which all alphas were above 0.889.

Related to decay is the amount of abandoned shops. The alpha in Pilot I was low. During the observations, it proved difficult to determine whether an abandoned building is a shop or something else. But this difference seems irrelevant. The question is whether there is decay through abandoned buildings, not whether it is a shop or a house. Therefore, the question is adapted to 'how many abandoned buildings are present', improving reliability to 0.833.

Finally, some questions have been added after Pilot I. Although the amount of decay is important, some neighbourhoods are very clean, but have one place with a lot of graffiti or garbage (for example under a viaduct) which can give a distorted image. Therefore, the distribution of garbage over the neighbourhood has been added. These questions were all reliable in the second pilot.

Street segment level

At the street level, several small problems with reliability occurred. Some of these seemed to come from an error in the instrument, instead of 'street segment' it mentioned 'street', leading to observations of different parts of the street. Correcting this improved reliability for the number of connecting streets (0.723) and footpaths (1.000) and the number of buildings (0.847) and front doors (0.863) onto the street.

Some problems that existed at the neighbourhood level were also present at the street level. Clarification of the concepts improved reliability for maintenance of houses (0.753), maintenance of paintwork (0.731), general maintenance (0.777) and dwelling type (0.888). The land use in the street (0.899) and whether houses are detached or not (0.979) were reliable, just like which facilities are present in the street.

As at neighbourhood level, measuring decay at the street level shows little variance. The answer options were adapted, improving reliability above 0.796 for all questions. For several other questions, the explanation was unclear. A clearer specification of the concepts improved reliability. For example with the type of street (0.743), width of the street (it is made clearer that the pavement is excluded, 0.755), fencing (0.742) and visibility (0.829) reliability improved. The type of street (0.933) and the questions on the type of traffic were all reliable, as were the questions on parking facilities.

Unfortunately, some questions still posed problems after adaptation and were removed from the instrument. The length of the street segment was scored differently by every observer. The large discrepancy resulted in the exclusion of this characteristic, which should be measured digitally. The question regarding houses that have windows with a good view wasalso removed, since this question was not reliable (0.071), and further clarification did not solve this. The distribution of front doors in the street segment was adapted after Pilot I, but this correction did not improve reliability (-0.226). This factor seems not to be clear enough to measure and the question was excluded.

House level

[8] One observer was excluded since no decay was scored.

The final level is the house level. Maintenance of the house (0.792) and the paintwork (0.749) were reliable, just as at the neighbourhood and street levels. Measuring decay remained problematic with an alpha around 0.500, even with the adaptations made after Pilot I. But the absolute difference is only between 0 and 1 pieces of garbage on the floor and graffiti or vandalism on the house. Therefore, the questions were not discarded, but the observations must be conducted with great focus, so no signs of decay will be missed.

The question ‘what is located next to the house' was not reliable in Pilot I. This was due to the fact that there was no option for corner houses. An answer option for a corner house was added, improving reliability to 0.975.

In Pilot I the reliability of security measures was good, but some security measures were added in Pilot II. Motion sensor lights that were excluded since they were regarded as not observable, appeared quite visible, and were therefore included after all. Also, speech intercom and speech intercoms with camera were included, since they were present a lot in the city centre, mostly on apartments. In Pilot II, all security measures scored reliably.

Visible house characteristics, like the type of house (0.891), the number of floors (0.965), the questions about fencing (above 0.900) and the distance to the neighbours (0.992) showed high reliability between observers. The same applies to the questions related to parking facilities.
Lastly, the variables that mark territoriality, like the presence of a welcome mat, flowers and furniture were difficult to observe and seems to be influenced by weather and season. Since there was also doubt about the stability and added value of these variables next to the general questions about maintenance, the questions are excluded, which completes the instrument.

6. Conclusion and discussion

A gap in the previous research on target selection is that observational studies have either used secondary data at the macro level, or carried out observations at the house and street level. Research that has looked systematically at the interaction between multiple spatial levels is scarce. To be able to conduct such a study, an observational instrument to measure neighbourhood, street and house level characteristics was created. The question addressed in this study was whether it is possible to create an observational instrument based on existing literature to measure stable neighbourhood, street and house characteristics.

A literature review provided many characteristics that can influence burglary target selection, which were then combined into an observational instrument. Even though not all variables first included proved to be able to be measured, most variables withstood the pilot tests. The main adaptations were clarifications of the abstract characteristics which improved reliability, though decay remains difficult to measure. This might be related to the somewhat unstable nature of decay. Since the differences were only small the items are included, but must be conducted with focus to ensure reliable measurements.

As addressed in the introduction, every research has its limitations. For this specific research, the exclusion of unstable characteristics is a limitation, although the chosen methods make this necessary. For observational research in general, the limitations lie in whether one can actually see what a burglar sees, and how the environment influences the observer. By creating the observational instrument based on characteristics from previous research, the risk of not seeing what a burglar sees is limited, because a structured observational tool is used. The use of this tool also reduces the risk of influence between the environment and the

observer (Semmens, 2011), though it is not totally absent. This has been seen in the pilot. In the city, conducting the observations with many people walking by was perceived as somewhat peculiar, while observing in the outskirts where the observer stood out felt uncomfortable. As an observer it is important to remain calm and focused during the observations, and not to rush because of any uncomfortable feeling. Every observation stands on its own, and requires focus, attention and time.

Further research

This observational instrument will be used in further research to conduct observations of about 2,000 houses in Ghent, the street segments and the neighbourhoods the houses are in. The data resulting from these observations will be used in different ways.

The first step is an analysis of the characteristics of burgled and not-burgled houses. This makes it possible to determine whether houses that are burgled look different than houses that are not-burgled, and whether their environment looks different. These analyses also make it possible to determine which level, the house, the street or the neighbourhood, is most important when it comes to target selection.

The second step is to determine whether house that are burgled once look different than houses that are burgled multiple times. There are more repeat burglaries than expected (Kleemans, 2001), and this risk seems to be transferred to dwellings nearby (Johnson et al., 2007). Although repeat and near-repeat burglary are important topics in burglary research, this process is hardly linked with environmental characteristics. It is suggested that repeat burglaries occur since burglars themselves come back after a previous burglary, or because they have heard from others. Future research will address whether repeat and near-repeat burglary perhaps occur due to similar environmental characteristics, instead of based on previous knowledge of the burglar.

Besides analyses of the observational data, several other factors will be included. This is done to compare the influence of observational data in relation to non-observational data. The factors that are included are socio-demographic factors like neighbourhood income and ethnicity. This analysis will also be conducted to determine whether some areas are more prone to repeat or near-repeat burglary than others. This combination can give a broad, in depth insight into factors that influence burglary target selection.

To conclude, the observational instrument presented in this paper has the potential to become a full scale instrument to observe stable neighbourhood, street and house characteristics. The instrument will be used in an ongoing research project on burglary target selection, to fill a gap in present research on burglary target selection. The use of this instrument might reveal interaction between different levels of burglary target selection.

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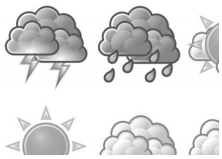
Appendix The observational instrument

Observation number:

Observer:

Date: ___-___-201_

Time: ___u___

Weather: 

Score list Neighbourhood characteristics

Name of the neighbourhood _____

Is this service available in the neighbourhood?

Library	o Yes	o No
Police station	o Yes	o No
Hospital	o Yes	o No
Train station	o Yes	o No
City Hall[1]	o Yes	o No
Shopping mall / street	o Yes	o No
Hotel / bed and breakfast	o Yes	o No
Industry	o Yes	o No
Petrol station	o Yes	o No
House of prayer (church / mosque etc.)	o Yes	o No
Catering establishments	o Yes	o No
School (all levels)	o Yes	o No
Sport facilities	o Yes	o No
Night shop	o Yes	o No
Offices	o Yes	o No

Land use in the neighbourhood (4 = As much residential as commercial)

1 2 3 4 5 6 7

Only residential Only commercial

Categorization of dwellings in the neighbourhood (4= As much single family houses as apartments)

1 2 3 4 5 6 7

Only single family houses Only apartments[2]

How many of the …

	None			**Half**			**All**
Houses are detached or semi-detached houses[3]	☐	☐	☐	☐	☐	☐	☐
Houses look affluent[4]	☐	☐	☐	☐	☐	☐	☐

How many of the houses in the neighbourhood…

	None			**Half**			**All**
are well maintained[5]	☐	☐	☐	☐	☐	☐	☐
have maintained paintwork[6]	☐	☐	☐	☐	☐	☐	☐
have a garden that is ≥5m deep in front of house ☐ **No gardens**	☐	☐	☐	☐	☐	☐	☐
have a maintained garden[7]	☐	☐	☐	☐	☐	☐	☐

[1] Also small offices in communities for small administration, like a passport or drivers license.

[2] Apartment is not necessarily an apartment building, also apartments in houses. It is about the people that live there, not the building)

[3] A detached house is at all sides detached from the neighbors, a semi-detached house has one neighbor attached.

[4] Affluent looks like they have more than average money to spend. Take size, maintenance and location etc. of the house into account.

[5] A maintained house = well done paintwork, bricks and stonework are in good shape, as is the roof. A less than maintained house has paintwork flaking off, several missing bricks and / or missing roof tiles etc.

[6] Maintained paintwork = does not flake off, or needs to be redone. If no paintwork (the frames are of aluminum or synthetic), score the maintenance level of that. Also take cleanliness of the paintwork into account.

☐ **No gardens**							
How many buildings are abandoned / empty / under construction	None	1-2	3-4	5-6	7-8	9-10	> 10

How often do you see … in the neighbourhood

	None			**Some**			**A lot**
Garbage / litter small[8]	☐	☐	☐	☐	☐	☐	☐
Garbage / litter large	☐	☐	☐	☐	☐	☐	☐
Graffiti small	None	1-10	11-20	21-30	31-40	41-50	> 50
Graffiti large	None	1-10	11-20	21-30	31-40	41-50	> 50
Signs of vandalism	None	1	2	3	4	5	> 5

Distribution[9] **of … over the neighbourhood**

	Not present	**All in one place**	**Mostly in one place**	**Concentrated in a few places**	**(Quite) equally spread**
Garbage / litter small[8]	☐	☐	☐	☐	☐
Garbage / litter large	☐	☐	☐	☐	☐
Graffiti small[9]	☐	☐	☐	☐	☐
Graffiti large	☐	☐	☐	☐	☐
Signs of vandalism[10]	☐	☐	☐	☐	☐

	Poor			**Average**			**High standard**
What is the general level of the maintenance of the neighbourhood	☐	☐	☐	☐	☐	☐	☐

Room for striking comments about the neighbourhood

[7] Maintained garden = no or little weed, trees and bushed trimmed etc. of the garden that is visible from the street. If you score none, all houses have less than maintained gardens, if you score all, all houses have at least a maintained garden.

[8] Small / large garbage. Small is smaller than a cola / beer can, large is everything larger. Small / large graffiti. Small is smaller than a sheet of A4 paper, large is everything larger. Vandalism is for example a broken or thrown over letterbox or bin, smashed windows or garbage set on fire.

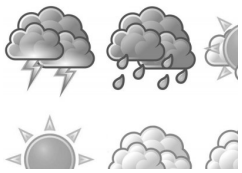
[9] Is there one place where there is a lot of garbage / graffiti / vandalism, or is it quite equally spread over the neighbourhood? When there is only 1 place with garbage etc., it is 'all in one place'. If there are 2, it is 'concentrated in a few places', with more, it can also be 'mostly in one place' or '(quite) equally spread.

Observation number:

Observer:

Date: ___-___-201_

Time: ___u___

Weather: 

Score list Street segment characteristics

Name of the street segment _____

House numbers on the street segment EVEN: _____ **ODD:** _____

Is this service available in the street segment?

Library	○ Yes	○ No
Police station	○ Yes	○ No
School	○ Yes	○ No
High school	○ Yes	○ No
Hospital	○ Yes	○ No
Train station	○ Yes	○ No
Public transport stop (bus, tram etc.)	○ Yes	○ No
City Hall[10]	○ Yes	○ No
Supermarket	○ Yes	○ No
ATM	○ Yes	○ No
Small retail shop (bakery, butcher, hairdresser etc.)[11]	○ Yes	○ No
Large retail shop (clothing store, department store, etc.)	○ Yes	○ No
Night shop	○ Yes	○ No
Shopping mall / street	○ Yes	○ No
Hotel	○ Yes	○ No
Restaurant	○ Yes	○ No
Cafe	○ Yes	○ No
Park	○ Yes	○ No
Afforestation[12]	○ Yes	○ No
Industry	○ Yes	○ No
Offices	○ Yes	○ No
Petrol station	○ Yes	○ No
House of prayer (church / mosque etc.)	○ Yes	○ No
Pharmacy	○ Yes	○ No
Sports facilities	○ Yes	○ No

Land use in the street segment (4 = As much residential as commercial)

1 2 3 4 5 6 7

Only residential — Only commercial

Categorization of dwellings in the street segment (4= As much single family houses as apartments)

1 2 3 4 5 6 7

Only single family houses — Only apartments[13]

How many of the houses …

	None			**Half**			**All**
are detached or semi-detached houses[14]	☐	☐	☐	☐	☐	☐	☐
look affluent [15]	☐	☐	☐	☐	☐	☐	☐

[10] Also small offices in communities for small administration, like a passport or drivers license.
[11] Small retail shop = door + < 2 windows. Large is more than 2 windows.
[12] Other green, like a forest, grassland (for cows etc.) or smaller public green areas – not parks or a few flower beds
[13] Apartment is not necessarily an apartment building, also apartments in houses. It is about the people that live there, not the building)
[14] A detached house is at all sides detached from the neighbours, a semi-detached house has one neighbor attached.

Type of street segment (1)

- No traffic allowed
- Mostly local traffic (local traffic within a neighbourhood)
- Small through traffic within a neighbourhood (larger road within neighbourhood, that 'collects' traffic)
- Medium through traffic between neighbourhoods (delivers traffic between neighbourhoods)
- Large through traffic between cities / villages
- Highway

Type of street segment (2)

- Dead end street
- Leaky dead end street (footpaths provide access to the dead end street)
- Cul-de-sac (dead end street with a circular 'bag' on the end)
- Leaky cul-de-sac (footpaths provide access to the dead end street)
- Cross street

Is the street segment part of a square?

- Yes
- No

Are cars allowed in the street (watch traffic signs)

- Not allowed
- Only public transport allowed
- One way traffic
- Two way traffic

Only local traffic allowed (watch traffic signs)

- No traffic allowed
- Yes
- No

Number of connecting street segments (street segment is > 4 meters wide)

2 3 4 5 6 6+ connecting streetsegments

Number of connecting footpaths / alleys (footpath or alley is < 4 meters wide)

0 1 2 3 4 4+ connecting footpaths / alleys

Width of the street segment without including pavement, but including parking spaces on the road

½ 1 1½ 2 2 ½ 3 3½ 4 4+ cars wide

Number of buildings in the street segment[16] ____ buildings

Number of front doors on street segment you can see from the street ____ front doors

How many of the … in the street segment

	None			**Half**			**All**
Houses have high fencing (fencing of 1.6 meter or higher)	☐	☐	☐	☐	☐	☐	☐
Houses have unobstructed view from the front door of minimal 2 neighbours front doors	☐	☐	☐	☐	☐	☐	☐

[15] Affluent looks like they have more than average money to spend. Take size, maintenance and location etc. of the house into account.

[16] Building = all living or working constructions in the street segment; do not include garages or sheds.

How many of the houses / buildings in the street segment have facilities to park a car…

	None (0%)			Half (50%)			All (100%)
On the driveway / carport	☐	☐	☐	☐	☐	☐	☐
In a garage beside the house	☐	☐	☐	☐	☐	☐	☐
On the street (allowed and possible without disturbing traffic)	☐	☐	☐	☐	☐	☐	☐
On parking lot in street segment	☐	☐	☐	☐	☐	☐	☐
Other, namely …	☐	☐	☐	☐	☐	☐	☐

How often do you see … in the street segment

	None			Some			A lot
Garbage / litter small[17]	☐	☐	☐	☐	☐	☐	☐
Garbage / litter large	☐	☐	☐	☐	☐	☐	☐
Graffiti small	None	1-5	6-10	11-15	16-20	21-25	> 25
Graffiti large	None	1-5	6-10	11-15	16-20	21-25	> 25
Signs of vandalism	None	1	2	3	4	5	> 5

How many of the houses in the street segment …

	None			Half			All
are well maintained[18]	☐	☐	☐	☐	☐	☐	☐
have maintained paintwork[19]	☐	☐	☐	☐	☐	☐	☐
that have a garden, have a maintained garden [20] ☐ **No gardens**	☐	☐	☐	☐	☐	☐	☐

How many buildings are abandoned / empty / under construction	None	1-2	3-4	5-6	7-8	9-10	> 10

	Poor			Average			High standard
What is the general level of the maintenance of the street segment	☐	☐	☐	☐	☐	☐	☐

Public transport line (bus, tram, etc.) passes through the street segment

- o No
- o Yes, 1 2 3 4 4+ lines

Room for striking comments about the street segment

[17] Small / large garbage. Small is smaller than a cola / beer can, large is everything larger. Small / large graffiti. Small is smaller than a sheet of A4 paper, large is everything larger. Vandalism is for example a broken or thrown over letterbox or bin, smashed windows or garbage set on fire.

[18] A maintained house = well done paintwork, bricks and stonework are in good shape, as is the roof. A less than maintained house has paintwork flaking off, several missing bricks and / or missing roof tiles etc.

[19] Maintained paintwork = does not flake off, or needs to be redone. If no paintwork (the frames are of aluminum or synthetic), score the maintenance level of that. Also take cleanliness of the paintwork into account.

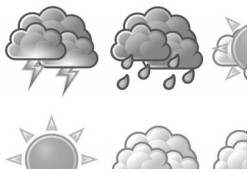
[20] Maintained garden = no or little weed, trees and bushed trimmed etc. of the garden that is visible from the street. If you score none, all houses have less than maintained gardens, if you score all, all houses have at least a maintained garden.

Observation number:

Observer:

Date: ___-___-201_

Time: ___u___

Weather: 

Score list House characteristics

Address of the house_____

Type of dwelling[21]

- Detached house
- Semi-detached house
- Row house
- Apartment building
- High rise building
- Other, …

Is the house a corner house

- Yes
- No

Number of floors, also include the attic as a floor / don't include the basement

- 1 2 3 4 5 6 6+

If the house is an apartment in a house, or in a high rise building, at which floor is the house / apartment situated?

- No high rise / apartment
- Ground floor
- 1st floor
- 2nd floor
- 3th floor
- 4th floor
- Higher than 4th floor
- Unknown / Not visible, but not ground floor (for example when the apartment is above a store)
- Unknown / Not visible

How often do you see … on / around the house (also include 1 meter in front of the house / garden)

Garbage / litter small[22]	None	1-2	3-4	5-6	7-8	9-10	> 10
Garbage / litter large	None	1	2	3	4	5	> 5
Graffiti small	None	1	2	3	4	5	> 5
Graffiti large	None	1	2	3	4	5	> 5
Signs of vandalism	None	1	2	3	4	5	> 5

House characteristics:

Front door visible from the street	Yes	No			
Front door has glass in it	Yes, transparent	Yes, partially transparent	Yes, not transparent	No	Front door not visible
Glass panel beside the front door	Yes, transparent	Yes, partially transparent	Yes, not transparent	No	Front door not visible
Garden at back separated from garden at front by a barrier (fencing, hedged, house itself)	Yes	No	No garden (front or back)		

[21] A detached house is at all sides detached from the neighbors, a semi-detached house has one neighbor attached, a row house has a neighbor attached at both sides, an apartment building is a row house, or small block with multiple dwellings (apartments) in it, a high rise building has multiple floors (4+) with multiple dwellings (apartments) in it.

[22] Small / large garbage. Small is smaller than a cola / beer can, large is everything larger. Small / large graffiti. Small is smaller than a sheet of A4 paper, large is everything larger. Vandalism is for example a broken or thrown over letterbox or bin, smashed windows or garbage set on fire.

The state of the house

	Poor			Average			High standard
What is the maintenance level of the paintwork of house[23]	☐	☐	☐	☐	☐	☐	☐
What is the general level of the maintenance of the house[24]	☐	☐	☐	☐	☐	☐	☐
How affluent does the house look?[25]	☐	☐	☐	☐	☐	☐	☐

Distance of dwelling to road / pavement (size / depth of the garden)

- Right on the street (no front garden)
- < 1 meter
- 1 – 5 meter
- 5 – 10 meter
- > 10 meter

Fencing present

- No
- Yes, low fencing (sitting height)
- Yes, medium fencing (easy to look over)
- Yes, high fencing (1.6 meter to 2 meter high)
- Yes, fortressing (> 2 meter high)

Type of fencing

- No fencing
- Can see through
- Cannot see though, but can see through in winter (not evergreen shrubbery)
- Cannot see through

Extent of fencing[26]

- No fencing
- Partial fencing
- Full fencing – where possible (For example: house is right on the street, garden is next to house)
- Full perimeter fencing

House to house visibility (between front door of the house to the house directly across the street)

- No house visible from this property
- Partial house visible from this property
- Clear visibility of house from this property

Garden condition (4 = Average level of maintenance)[27]

- No garden

[23] Average maintained paintwork = does not flake off, or needs to be redone. If no paintwork (the frames are of aluminum or synthetic), score the maintenance level of that. Also take cleanliness of the paintwork into account.
[24] Average maintained house = well done paintwork, bricks and stonework are in good shape, as is the roof. A less than maintained house has paintwork flaking off, several missing bricks and / or missing roof tiles etc.
[25] Affluent looks like they have more than average money to spend. Take size, maintenance and location etc. of the house into account.
[26] Is there fencing between the pavement and the front of the house. If yes, is the fencing around the whole house (or garden if it is a row house), or just around a part of the house (or garden if it is a row house). When the house is right on the street, full fencing is possible if the garden beside the house has a barrier around the whole house
[27] Average maintained garden = no or little weed, trees and bushed trimmed etc. of the garden that is visible from the street. If you score none, all houses have less than maintained gardens, if you score all, all houses have at least a maintained garden.

1 2 3 4 5 6 7

Poorly maintained Maintained to a high standard

Is there a traffic light in sight when you stand right in front of the house?

- o Yes
- o No

How can a car be parked at this house (multiple answers possible)

- o On the driveway / carport
- o In a garage inside the house
- o In a garage attached next to the house
- o In a garage separate from the house
- o On the street in front of the house (allowed and possible without disturbing traffic)
- o Separate parking lot in the street
- o No parking facilities

What is located next to the house

Left (when facing to the house)

- o Residential house
- o Small retail shops (<2 windows), namely…
- o Large retail shops (>2 windows), namely …
- o Night shop
- o Horeca (bars, restaurants, …), namely …
- o High school
- o School
- o Park / other open area
- o Afforestation (Forest, grassland or small public green)
- o Industry
- o Offices
- o Empty space / building ground
- o Not applicable, corner house
- o Other, nl …

Right (when facing to the house)

- o Residential house
- o Small retail shops (<2 windows), namely…
- o Large retail shops (>2 windows), namely …
- o Night shop
- o Horeca (bars, restaurants, …), namely …
- o High school
- o School
- o Park / other open area
- o Afforestation (Forest, grassland or small public green)
- o Industry
- o Offices
- o Empty space / building ground
- o Not applicable, corner house
- o Other, nl

Distance to <u>building</u> next to / closest to the house

Left (when facing to the house)

- o Attached
- o ½ meter
- o 1-3 meter
- o 3-5 meter
- o 5-10 meter
- o 10+ meter
- o Not applicable, corner house

Right (when facing to the house)

- o Attached
- o ½ meter
- o 1-3 meter
- o 3-5 meter
- o 5-10 meter
- o 10+ meter
- o Not applicable, corner house

Number of pedestrian footpaths / alleys right next to / around the house. Do NOT include pavement

- o None 1 2 3 4 4+ footpaths / alleys

If footpath / alley / park / other open space next to the house

- o No footpath / alley / open space
- o Directly next to the house
- o With low fencing in between
- o With medium to high fencing in between
- o With high fencing in between

Visible security measures present (multiple answers possible)

- ☐ No
- ☐ Yes, alarm system
- ☐ Yes, security camera
- ☐ Yes, speech intercom
- ☐ Yes, speech intercom with camera
- ☐ Yes, climb in security pins at windows or roof gutter
- ☐ Yes, motion sensor lights
- ☐ Yes, security bars and barricades
- ☐ Yes, sign of dog presence, namely dog / dog house / sign 'beware of the dog' / other …
- ☐ Yes, other namely ….

Room for striking comments about the house