SUSTAINABLE
URBAN AREAS
27

The meaning of activities in the dwelling and residential environment

A structural approach in people-environment relations

Janine Meesters

TU Delft

Delft Centre for Sustainable Urban Areas

Delft University of Technology

The meaning of activities in the dwelling and residential environment

A structural approach in people-environment relations

The series **Sustainable Urban Areas**
is published by IOS Press under the imprint Delft University Press

IOS Press BV
Nieuwe Hemweg 6b
1013 BG Amsterdam
The Netherlands
Fax +31-20-6870019
E-mail: info@iospress.nl

Sustainable Urban Areas is edited by
Delft centre for Sustainable Urban Areas
C/o OTB Research Institute for Housing, Urban and Mobility Studies
Delft University of Technology
Jaffalaan 9
2628 BX Delft
The Netherlands
Phone +31 15 2783005
Fax +31 15 2784422
E-mail mailbox@otb.tudelft.nl
http://www.otb.tudelft.nl

The meaning of activities in the dwelling and residential environment

A structural approach in people-environment relations

Proefschrift

ter verkrijging van de graad van doctor
aan de Technische Universiteit Delft,
op gezag van de Rector Magnificus prof. dr. ir. J.T. Fokkema,
voorzitter van het College voor Promoties,
in het openbaar te verdedigen op vrijdag 15 mei 2009 om 10.00 uur

door
Janine MEESTERS

ingenieur in Huishoud- en Consumentenwetenschappen
geboren te Amersfoort

Dit proefschrift is goedgekeurd door de promotor:
Prof. dr. P.J. Boelhouwer

Copromotor:
Dr. H.C.C.H. Coolen

Samenstelling promotiecommissie:
Rector Magnificus, voorzitter
Prof. dr. P.J. Boelhouwer, Technische Universiteit Delft, promotor
Dr. H.C.C.H. Coolen, Technische Universiteit Delft, copromotor
Prof. dr. C.J.P.M. de Bont, Technische Universiteit Delft
Prof. dr. P. Hooimeijer, Universiteit Utrecht
Prof. dr. ir. H. Priemus, Technische Universiteit Delft
Prof. ir. A. Reijndorp, Universiteit van Amsterdam
Dr. ir. L.P.A. Steenbekkers, Wageningen Universiteit

The meaning of activities in the dwelling and residential environment
A structural approach in people-environment relations
Thesis Delft University of Technology, Delft, the Netherlands

The author wishes to acknowledge the financial assistance of the Netherlands Organisation for Scientific Research (NWO), the Dutch government through the Habiforum Program Innovative Land Use and Delft University of Technology through the Delft Centre for Sustainable Urban Areas.

Design and dtp: Cyril Strijdonk Ontwerpbureau, Gaanderen
Language editing: Nancy Smyth van Weesep
Cover photo: Paolo Tiso
Printed in the Netherlands by: Haveka, Alblasserdam

ISSN 1574-6410; 27
ISBN 978-1-60750-012-4
NUR 755

Contents

Preface

Before writing a preface to my thesis, I tried to recall just when I had taken the first steps towards a PhD. My earliest memories of this 'vocation' go back to my third year at university, when I was doing an internship at a consultancy firm. My supervisor there, Janine Boers, had asked me what I wanted to do after graduating. Though I didn't know exactly what kind of job I would be looking for, what I knew for sure was that I didn't want to do a PhD. That would mean more years of being cloistered within the university, while I was curious about the real world and wanted to get to work in it. Well, life took an unexpected turn, and after graduation I actually took a position as a PhD student. And from the very first day on the job, I have enjoyed working at the university. The result of that work lies here before you.

I got off a good start; there was a well-defined research proposal waiting for me, and I was placed in a group with many experienced researchers (on housing systems) who were always willing to help. Henny Coolen, my daily supervisor, wrote the research proposal and developed the conceptual framework for this study. As befits a dedicated supervisor, he never tired of explaining the theoretical concepts. Yet he also gave me ample room and opportunity to grapple with the concepts myself and to come up with my own ideas. Peter Boelhouwer, my promotor, kept an eye on the whole project. After each meeting it was always clear which step to take next. The members of the theme group 'housing preferences', whom I bombarded with presentations about ongoing work, never hesitated to give feedback on my work.

Sylvia Jansen contributed in several different ways - in the first place, by being a great office-mate. We had many casual chats about how we had spent the weekend or other non-work related activities. In the second place, having earned her PhD already, she could cheer me up, when I felt things were taking too long, or when I got bogged down with my data. Conveniently, she is also an expert on statistics, so, besides cheering me up, she taught me a lot about performing logistic regressions and interpreting statistical analyses. Janneke Toussaint started at the OTB as a researcher at almost the same time as I did. Thus, we have shared the ups and downs of doing a PhD. The experience proves that shared joy is double joy, but also that frustration, when shared, is not all that bad in the end. From my work at the editorial office of the Journal of Housing and the Built Environment, I was lucky to know Nancy Smyth van Weesep. Nancy has very good language editing skills, and I am very grateful that she took on the job of editing the whole manuscript. She has improved the thesis both in structure and style, even making it a pleasure to read.

Many people outside the university were also involved in this thesis. First of all, I would like to thank everyone who participated in this research for their generosity in freely giving us half an hour of their time to talk about their everyday lives. Second, I would like to thank my friends from Communione e Liberazione in Leiden, who never failed to inquire how I was progressing. Through their continued interest they showed me the value of friend-

ship. Finally, I would like to thank my family. At first, my mother Elly was a bit skeptical about investigating why people consider it important to sit in their garden or why they consider watching TV important. Her critical stance stimulated me to think about how the data could be applied to improve house building (something I might do in the future). My father Jos passed his enthusiasm for housing on to me. My brother Mike and his wife Saar managed to have three children in the same amount of time that it took me to get my PhD, and they still found time to meet me regularly to share a meal. My sister Susan and her husband Raymond always showed strong interest in my research and were willing to ponder the interpretation of the findings. And last but not least I would like to thank my grandmother. I have no idea how many candles she burned for the sake of making good progress in my work, but her efforts might have caused considerable smog in Bergen op Zoom.

All these people, in many different ways, have helped me complete this thesis. Doing this PhD has been a valuable and meaningful experience that I would not have wanted to miss. I'm glad that my life took a different turn than anticipated. Indeed, I hope there will be more unexpected paths like this one opening up for me in the future.

Janine Meesters
Delft, February 2009

1 Introducing the meaning of dwelling

1.1 Background

The dwelling is a central setting in people's everyday life. This may be deduced from the diverse meanings of 'dwelling'. It can have a functional meaning – for example, having a roof over one's head. Dwelling can also have a social meaning – for example, being together with family or friends. The dwelling itself can be an indicator of one's position in society. Or people may regard it as an economic investment. Most of these meanings are related (either directly or indirectly) to a wide range of activities. In this light, the dwelling can be legitimately studied as a centre of activities. Doing so implies drawing connections between activities and meanings. Or as Arias (1993) states: "Use gives meaning to housing and at the same time meaning guides how housing is used." Against that backdrop, this study investigates everyday activities in the dwelling and the residential environment. In particular, it focuses on the meanings people attach to these activities.

This study forms part of a broader research project on housing experience and housing choice behaviour financed by The Netherlands Organisation for Scientific Research (NWO). The conceptual and methodological framework in which the project is grounded has been worked out in a companion study (Coolen, 2008). One of the main assumptions underpinning the research is that meaning lies in the relation between people's activities and features in their environment (Chemero, 2003). Indeed, responding to the conceptual framework as set forth by Coolen (2006), Heft and Kyttä assert that to gain insight into the meaning of settings, a setting should be related to the activities performed in it (Heft and Kyttä, 2006). That is why the present study encompasses people's activities in the dwelling and residential environment as well as the meanings people attach to them. Taken together, this is what we call the meaning of 'dwelling'. Hence our definition of 'dwelling' as a set of daily activities performed in the dwelling and residential environment. We consider people-environment relations to be reciprocal; that is, people can perform certain activities, while the environment affords certain uses. Consequently, if the setting changes, the meaning might also change; in other words different features might afford different uses. For instance, city centres have different features than suburban and rural areas. City centres differ from suburban and rural areas notably in the sense that cities have a high level of amenities; in particular, they offer a wide range of facilities for leisure activities like restaurants, cinemas, theatres and museums. While suburban or rural areas might also have some of these kinds of leisure facilities, they don't have as many. In contrast, suburban but especially rural areas may be characterised as green residential environments, in that they have a large amount of green space like meadows, parks or forests.

The city has a somewhat dual character (Reijndorp *et al.*, 2005). On the one hand, its high level of amenity and high concentration of population create

ample opportunities for work, leisure and social interaction, opportunities which facilitate people's everyday activities (Van Diepen and Arnoldus, 2003). This makes the city centre an attractive place to live. On the other hand, this heterogeneous character might pose a threat; the high density of both buildings and people make the city a crowded place. Not only are green areas sparse but air pollution is pervasive due to heavy traffic. Furthermore, cities generally have higher levels of crime and vandalism than suburban and rural areas, which makes safety an important issue (Karsten *et al.*, 2006). For centuries, the well-off have left to live 'outside' the city (Montijn, 2002); in the course of the twentieth century, out-migration even became a social movement. First it was the upper class who moved to quieter rural areas, buying estates at some distance but still within reach of the cities. Through increasing wealth and the development of railroads, later on of highways, rural areas came within reach of a wider segment of the population. After the Second World War, large-scale neighbourhoods were built for the middle class, making suburban areas a widespread phenomenon (Montijn, 2002) and a place to live for many.

Much literature, both scholarly and in the media, paints a rather negative picture of suburban areas (e.g. Montijn, 2002; Truijens, 2006). The suburbs are stereotyped as mono-functional and dull. However, these stereotyped images do not seem to do justice to people's experiences. There is substantial evidence that people living in suburbs are satisfied with their place of residence (Lupi, 2003; Metaal, 2005; McDonogh, 2006). For example, suburban areas combine features from both the city centre and rural areas. On the one hand, suburban areas are close to city centre facilities, because they are located at the rim of large cities. On the other hand, they provide a spacious and green residential environment. Therefore people see the suburb as a functional residential environment where they can realise their housing preference: a single-family dwelling with a garden, with sufficient room nearby for their growing children to play and a central location with respect to their work (Metaal, 2005). The same aspects are important to people who would like to live in a rural type of residential environment, though rural characteristics like quiet, space, green and safety also play an important role in (rural) housing preferences (Van Dam *et al.*, 2002).

The observation that city centres, suburban and rural areas differ from one another is self-evident. Everyone, professionals and residents alike, will create an idealised image of the residential environment. That image plays an important role in the preferences of housing consumers (Van Dam *et al.*, 2002). However, as the images of professionals and residents seem to diverge, more insight is needed into the motives underlying residents' preferences for a type of residential environment. That is why this thesis looks not only at the meaning of dwelling but also addresses the extent to which the meaning of dwelling in a city centre, suburban and rural type of residential envi-

ronment differs. It specifies the link between the setting (e.g. type of residential environment), the activities performed in that setting and the meanings attached to the activities. This might lead to better agreement among professionals and residents on the experience that given types of residential environment could or should afford.

The aim of the present study is to provide insight into the meaning of dwelling in a city centre, suburban and rural type of residential environment. This thesis offers insight into the content of that meaning by inquiring "What does dwelling mean to people living in different types of residential environments?" And it offers insight into structure, asking "In what way are activities related to settings (dwelling and residential environment features) and the meanings people attach to those activities?"

1.2 Relevance of the study

This thesis contributes to the scientific literature on the meaning of the built environment by systematically relating settings, activities and meanings. The conceptual framework that regards people-environment relations as reciprocal improves insight into both the content of the meaning of the built environment and the structure of that meaning. A key assumption underpinning this thesis is that different settings or features afford different meanings. Therefore, to gain insight into the meaning of the built environment, it is important to take different features into account.

This thesis makes the conceptual framework presented in the companion study by Coolen (2008) operational and provides empirical evidence for it. By so doing, it contributes to a better understanding of the way people assign meaning to the environment. The research also shows to what extent feature-specific meanings contribute to housing preferences. Furthermore, the study contributes to the body of research on the meaning of the built environment. Much of the literature refers to this as the meaning of home (e.g., Després, 1991b; Moore, 2000; Easthope, 2004; Blunt and Dowling, 2006), whereby home is mainly regarded as a holistic concept. With the approach presented in this thesis, we are able to do what Rapoport (2001) calls dismantling the meaning of the built environment; this entails focussing on the relations between settings, activities and meanings.

This thesis can also be of value to practitioners. As a result of a mismatch between housing policies and market developments, the Dutch housing market has been under pressure for many years; demand has been greater than supply (Boelhouwer, 2005). To increase housing output quickly, the national government designated large-scale building locations near cities (VINEX locations) in the early nineties. By now, these building sites are almost filled up. The new challenge facing (local) governments and developers is to build with-

in the existing urban fabric, a task which raises practical problems of its own. First of all, land prices are usually high in the cities, certainly higher than outside the urban fabric. Second, building plots are surrounded by existing buildings and infrastructure; these set the parameters within which new development can take place. As a consequence, development in high densities is very likely. Yet if we look at people's housing preferences, it appears that people want more space, both in the dwelling and in the residential environment (Boumeester *et al*., 2006). That preference might clash with the conditions (actually, limitations) described above for developing within the existing urban fabric.

The insights obtained in this study can be used to improve housing preference research since it not only looks at concrete and intrinsic features of the dwelling and residential environment but also takes the underlying motivations for housing preferences into account. By moving in this direction, housing preference research could better reflect the decision-making process of consumers. The data can also be used to improve architectural and urban design by inspiring some new questions: e.g., in what way can a sense of space be realised in a high-density environment? There are examples where architects and urban planners have exchanged some private outdoor space for semi-public space (Meesters and Hoekstra, 2006; Bretherton and Pleace, 2008). Generally speaking, residents respond positively to the provision of (semi-)public green areas; they feel it contributes to a sense of space. Furthermore, the data can be used for product differentiation. Because it specifies the relation between settings, activities and meanings, one can visualise what the effect might be of leaving certain features out. The designer could see what kind of activities would be lost or, vice versa, what the implications of adding certain activities would be for the design. Finally, the data can be used for marketing. The product could be targeted at a specific group of consumers; these data would provide insight into which feature-specific meanings the selected group of consumers might deem important.

1.3 Research questions and structure of the thesis

The research questions of this thesis are:

1. *Which activities do people perform in their dwelling and residential environment?*
2. *To what extent do activity patterns exist?*
3. *To what extent do socio-demographic variables, dwelling features and residential environment features influence activities?*
4. *To what extent do general meanings influence activities, also controlling for socio-demographic variables, dwelling and residential environment features?*
5. *To what extent do different orientations of general meanings exist for different*

groups of people subdivided by type of residential environment, age and household composition?

6. *What are the most mentioned meanings for activities in the dwelling?*
7. *What are the most mentioned meanings for activities in the residential environment?*
8. *To what extent do meaning structures differ per type of residential environment?*

The second chapter describes the theoretical foundations of the conceptual framework. The first of the three supporting pillars is means-end theory (Reynolds and Gutman, 1988), which links people's behaviour to a certain product. The second pillar is Rapoport's work on the meaning of the built environment (Rapoport, 1982, 1990, 1995, 2001). And the third is the notion of affordances (Gibson, 1979), which describes how people's activities are related to features in the environment (Chemero, 2003). This theoretical foundation provides the grounds on which the conceptual framework used in this thesis is constructed and its underlying assumptions are defined. The third chapter describes in detail the socio-demographic characteristics of the research sample. The fourth chapter narrows in on the activities people perform in the dwelling and residential environment. We use correspondence analysis to identify activity patterns of people living in a city centre, suburban and rural type of residential environment. We then use logistic regression analysis to see to what extent socio-demographic variables affect the activities they perform. Chapter four answers research questions 1, 2 and 3. The fifth chapter focuses on the relation between a setting (for example the living room or the garden), the activities performed in that setting and the meanings people attach to the activities. These relations are represented by what we call a meaning structure. Chapter five answers research questions 4, 5, 6 and 7. The sixth chapter looks at the differences and similarities in meaning structures among a city centre, suburban and rural type of residential environment. Chapter six answers the last research question: To what extent do meaning structures differ per type of residential environment? The final chapter of this thesis summarises the main research findings and reflects upon the conceptual framework and the methodology.

2 Conceptualising the meaning of dwelling

This chapter presents the conceptual framework of this study. As set forth earlier, the aim of this study is to improve insight into the meaning of dwelling in city centre, suburban and rural types of residential environment. The three main concepts in the conceptual framework are settings (dwelling and residential environment features), activities performed in those settings and the meaning people attach to activities. Meaning is an abstract and comprehensive concept. Before focusing on the meaning of dwelling, the first section briefly describes environment-behaviour studies, which focus on the relation between people and the environment they live in. The second section gives an overview of universal value types and categories of the meaning of home. The third section defines dwelling in light of the literature on how people use their dwelling and residential environment and, by extension, on how the type of residential environment influences activities. The fourth section describes the means-end chain, a theory that connects people's choice behaviour and values. This chapter concludes by presenting the conceptual framework in which settings, activities and meaning are connected together.

2.1 Environment-behaviour studies

Environment-behaviour studies focus on the interaction between a person and his or her environment. Studying the interaction between people and the environment is all about studying behaviour (Van Dorst, 2005). What people do is always tied to a specific place. In other words, people behave differently in different places (Bechtel, 2000). One of the most important assumptions in environment-behaviour studies is that they regard environment-behaviour relations as interrelations. This means that the environment influences behaviour, but behaviour can also lead to changes in the environment. Environment-behaviour studies put an emphasis on various aspects.

1. Behavioural approach: the environment-behaviour relation is described in a stimulus-response model. Research topics include stress caused by the environment and adaptability of respondents to that stress, for instance.
2. Ecological psychology: the environment is a behavioural setting; it affords and causes certain perceptions and behaviour.
3. Environmental psychology: research looks into consequences of human behaviour on the environment such as the effects of car use on global warming (Van Dorst, 2005).

In the early 1960s interest in environment-behaviour relations increased. Researchers became more conscious of the fact that in order to understand the functioning of a city, it was also important to understand the behaviour of the people living in it. One of the first major publications on this topic was the book *Why People Move* (Rossi, 1955), examining the way residents and their

environment react to each other. Rossi analysed environment-behaviour relations at three levels by looking at distinct features of neighbourhoods, families and individuals. Perceived neighbourhood identity, family size and composition and attitudes toward housing proved to be important indicators in housing and residential mobility (Rossi, 1955). Environment-behaviour studies put an emphasis on the meaning of the residential environment from a residents' perspective. Two of the most important questions are "In what way do people use the environment?" and "Which meanings do people attach to the environment?" To answer these questions requires a closer examination of people's relations with meaningful features of the environment. That is the focus of ecological psychology (Coolen, 2006).

2.1.1 Ecological psychology: the reciprocal relation between people and the environment

Within the field of ecological psychology, the work of Gibson is central. He advanced an explanation of how people perceive the environment: the theory of affordances (Gibson, 1979). This theory describes the environment in an objective manner, specifying what properties the environment has (or specifying features of the environment) and the way in which people use them. Studying what people do in the environment can give more insight into people-environment relations (Cresswell, 2004). These relations are more than the sum of all the single relations between features and individuals. It is the interaction between individual and structural forces that shape environmental meaning (Després, 1991a). To clarify this assertion we shall describe people-environment relations in more detail below.

The environment consists of features that have all sorts of physical properties. These (combinations of) features provide potential user options. These features are always there; it is up to the user to recognise them. The potential user options in the environment send out all sorts of cues. These cues provide information about the most appropriate choices to be made (Rapoport, 1982). In order to do this, the cues must be shaped in such a way that people are able to understand them. The cues can then elicit appropriate emotions, interpretations, behaviours and transactions by setting up the appropriate situations and contexts. The way in which a person can use the meaningful features is not a straightforward process. First of all the user option of a feature is relative to the user. For example, an adult can sit on a large chair, whereas a young child is not tall enough to reach the chair and sit on it. Second, the user has to recognise the user option. During his life a person learns to recognise potential user options, either by what other people teach him or by his own experience. Third, people can adjust the properties of features. For example, a person can cut off the legs of a chair so a young child can reach the seat and sit on it. And fourth, ideas about what a potential user option is can change

over time (Chemero, 2003).

So the potential user option is a relation between a person and a feature. In this use lies the concept of affordance (Gibson, 1979). Chemero (2003) defines affordances as relations between activities of people and features of the environment. Not only is the person-feature relation important, but the context in which that relation takes place is important too. For example, a pen on a desk affords writing, while a pen on a desk of the director of your company might not afford writing. So affordances can have both a physical and social dimension (Heft, 2003). The environment contains many different features, providing many different user options. A person can claim his own user space in a set of situations in which he can exercise one or more of his abilities (Chemero, 2003). In this sense the environment in which a person moves can be regarded as "a system of settings in which systems of activities take place" (Rapoport, 1990). A setting is a defined area within the environment with specific features. The system of settings stands for every possible user option which the environment provides.

In short, people-environment relations manifest themselves through use. Features in the environment provide user options. By using these options people respond to the environment and can even change the environment. Consequently, people-environment relations are reciprocal. An affordance is the relation between people's activities and features in the dwelling and residential environment. Meaning lies in the relation between people's activities and features in the environment. So, meaning is the outcome of that relation. This relation is dynamic: both features in the environment and actions of people can change over time.

2.2 The meaning of people-environment relations

The environment consists of many different features and there are many different people to use the features. This can create many different relations, which can have a large variety of meanings. People do not only react to the environment, they also act. Many studies assume that behaviour is goal-directed and value-oriented. As a result, people are more likely to act in a certain way if they believe it will help them reach their goals (Lindberg *et al.*, 1992). Therefore, for a better understanding of why people choose some user option over another, it can be useful to know more about people's value structures. Individuals organise and structure their values so that they are in a position to choose among alternative objectives and actions and are able to resolve potential conflicts. Such a configuration of values is called a value structure. These value structures are relatively stable, although they can evolve over time as social conditions are transformed (Schwartz, 2006). People use

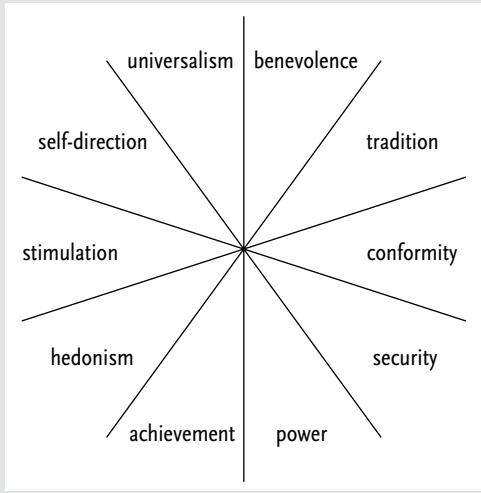
value criteria to select and justify their actions (Schwartz, 1992). Values are defined as "desirable transsituational goals that serve as guiding principles in the life of a person or other social entity" (Schwartz, 1994). Values touch different aspects of life and have the following six main characteristics: (1) Values are beliefs that are strongly associated with feelings. People feel happier if they can live by these values or these values are fulfilled. (2) Values guide people's actions. (3) Values are not specific to one activity or situation. For example, honesty can be applicable in work situations, in politics or in sports. This characteristic distinguishes values from attitudes or norms, because attitudes and norms are specific for a certain activity or situation. (4) Values are like standards, used to judge situations. This happens unconsciously. Only when for one action two conflicting values are relevant does it become clear that we use values to judge the situation. (5) Every person orders values hierarchically. (6) The relative importance of various values together guides action. An attitude towards a specific situation or action can consist of more than one value (Schwartz, 2006). As one can imagine, there are innumerable different values. Some of these values are closely related and have similar meanings, such as pleasure and happiness. Similar values can be organised in groups called value types.

2.2.1 Universal value types

The value types that Schwartz developed based on cross-cultural research contain a limited number of values which can be considered universal and relatively constant. However, the value orientations of people are dynamic and can change during their life course (Schwartz, 1992). The ten motivational, universal value types are listed below (Schwartz, 1992; Schwartz, 2006).

1. Self-direction: the need to be independent in thought and action (e.g. creativity, freedom, choosing your own goals, curiosity, independence)
2. Stimulation: the need for variety and stimulation (e.g. variety, enterprising, excitement, novelty, challenge)
3. Hedonism: the need to experience pleasure (e.g. pleasure, enjoying life, happiness)
4. Achievement: the need to experience personal success through demonstrating competence according to social standards (e.g. ambition, intelligence, obtain social approval)
5. Power: the need for status differentiation by attaining or preserving a dominant position (e.g. authority, wealth)
6. Security: the need for safety, harmony and stability of society, relationships and the self (e.g. sense of security, good health, cleanliness, sense of belonging)
7. Conformity: the need not to harm others or violate social expectations or norms (e.g. obedience, politeness, honouring parents)

Figure 2.1 Universal value types



8. Tradition; the need to respect and commit to shared experiences and fate (e.g. religion, humility, respect, commitment)
9. Benevolence; the concern for the welfare of close others in everyday life (e.g. true friendship, honesty, helpfulness, loyalty)
10. Universalism; the concern for the welfare of all people and for nature (e.g. social justice, nature)

A value type is a collection of diverse values. All the values people can have will fit into one of these universal value types. Figure 2.1 shows the ten value types. Self-direction, stimulation, hedonism, achievement and power are value types that serve the individual interest and are situated on the left side of the circle. Benevolence, tradition and conformity serve the collective interest. These value types lie opposite the value types that serve individual interests. Universalism and security serve both types of interests and form a border in the circle at the transition of individual and collective interests. In this way the compatible types are adjacent and the conflicting value types are situated opposite to each other in the circle. An example of two compatible value types is power and achievement. Values that have been mentioned in these categories are authority and influence. An example of two conflicting value types is self-direction and conformity. Values that have been mentioned in these categories are independence and obedience.

2.2.2 General meanings of home

Universal value types can be applied to any aspect of life, so also to people-environment relations. In the environment, the dwelling is the primary anchor from where people explore the world (Rapoport, 1995). The dwelling is the domain where many people-environment relations take place. A large body of literature is available on the meaning of the dwelling, mainly referred to as the meaning of home (for overviews see e.g. Després, 1991b; Moore, 2000; Easthope, 2004; Mallett, 2004; Blunt and Dowling, 2006). Home is not a univocal term and is used in many different ways. First, house and home are related, but certainly not identical. A house or dwelling accommodates home. But the boundaries of home can be much wider than the boundaries of the house (Mallett, 2004). Rapoport (1995) makes a clear distinction between an object (e.g. a dwelling) and the meaning it has for people. The many proverbs using home all emphasise the affective core of the concept home. Phrases concerning security, control and relaxation occur often in these proverbs. Rapoport defines home as “the meaning one attaches to the dwelling” (Rapoport, 1995).

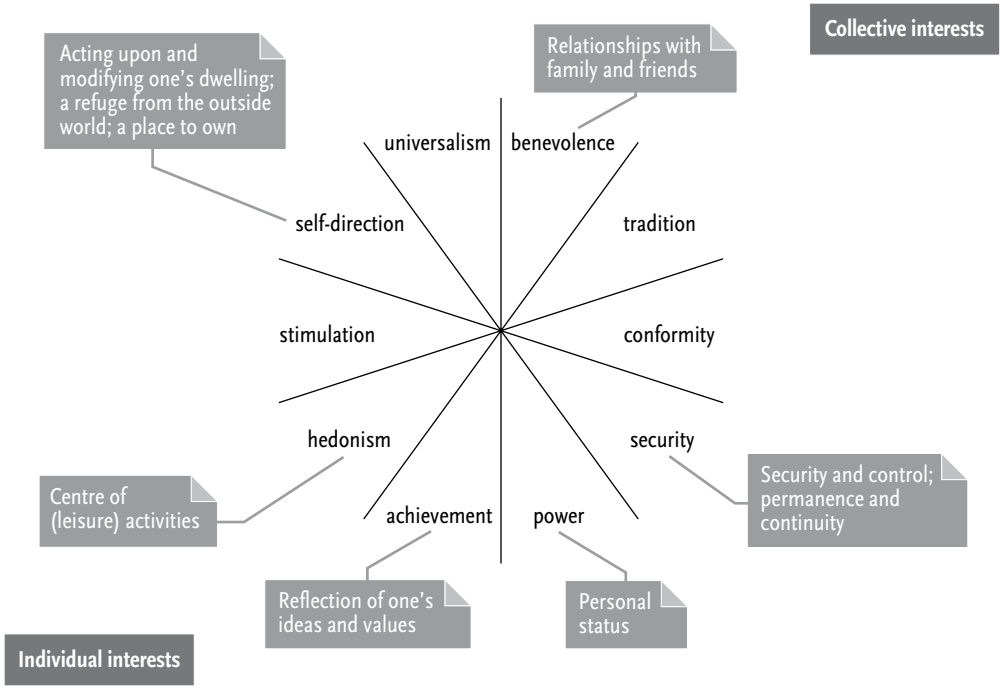
In this sense the meaning of home does not exist; home is already meaning.

In environment-behaviour studies, the following ten general categories of home often occur:

1. Home as security and control; people refer to their home as an area where they are in control of spatial design and social interaction. This provides people with a sense of freedom and emotional security.
2. Home as reflection of one's ideas and values; people refer to their home as a symbol of how they see themselves and want to be seen by others.
3. Home as acting upon and modifying one's dwelling; the process of controlling and acting upon one's environment gives a sense of achievement and control, making the home a place for self-expression and for freedom of action.
4. Home as permanence and continuity; being in the same place for weeks, months or years makes the place familiar. This provides people with a sense of belonging somewhere. Memories can have an important function in this meaning category; they show the connection to the past. For example, the memories of the place where you grew up can be very detailed and strong.
5. Home as relationships with family and friends; a place to be together with people one cares for.
6. Home as centre of activities; the home provides a place for work, hobby and leisure activities.
7. Home as a refuge from the outside world; a place to get away from outside pressures and where one can control the level of social interaction and regulate the level of privacy and independence.
8. Home as indicator of personal status; it shows people's socio-economic position.
9. Home as material structure; the concrete physical dimension of the home.
10. Home as a place to own; the positive experience of home as freedom of action, controlled space and permanence. It can also be regarded as an important economic investment (Després, 1991b).

The general meanings of home are a more specific manifestation of the universal value types. Combining both universal value types and categories of home gives an interesting picture (see Figure 2.2). General meanings of home are represented both in value types serving the individual interest and in value types serving the collective interest. For example, home as relationships with family and friends is part of the value type benevolence. Benevolence is clearly a value type that serves the collective interest. In contrast, home as an indicator of personal status is part of the value type power. Power is a value type serving the individual interest. The general meaning of home as a material structure falls outside the universal value types; it is a function of the dwelling which is not directly related to a particular value type. This does not

Figure 2.2 Value types of the meanings of home



Based on: Després, 1991b and Schwartz, 1992

mean that home as a material structure can be indirectly related to a value type. For example, a large dwelling can afford the value type power; people feel that a large dwelling positively contributes to personal status. The value types stimulation, universalism, tradition and conformity are not clearly related to one of the general meanings of home. A possible explanation might be that these value types are more about how people look upon society and how people think that the society expects them to behave. These domains might come up more when looking at for example social interaction in neighbourhoods. Still, the general meanings of home are rather equally divided over the value types. This indicates that dwelling and more specifically the meaning of dwelling is both an individual and collective affair.

The dichotomy of collective and individual interests among the value types shows that general meanings of home touch both the private and public world. The (private) dwelling has a key role in people-environment relations because, in the environment, the dwelling forms the primary anchor for the individual, from which a person explores the world. Rapoport regards the dwelling as a sub-system in a larger system of settings (Rapoport, 1995). This means that the dwelling is an integral part of the environment (Coolen, 2006). The different systems of settings are connected to each other through the activities that take place in the sub-systems. In this way, these activities interrelate the private (the dwelling) and public world (residential environment). This is nicely illustrated by the definition of the verb dwelling giv-

en by Van Leeuwen (1980): "Dwelling is a more or less permanent staying in a place from where people explore and experience the world and where they return, where they come home." Dwelling can be considered as a universal term (Oliver, 2003) denoting the reciprocity of people-environment relations. Dwelling is an activity of living and residing. At the same time dwelling is also the place or built form which is the focus of residence (Oliver, 2003). These two aspects (activity and built structure) are also reflected in what King (2008) calls, closely related to Heidegger's notion of being in place, *being in dwelling*. They all imply that for a full understanding of people-environment relations it is important to take both the activity and setting into account.

Within the relation between activities and settings lies the meaning of people-environment relations (Chemero, 2003). Or as Arias (1993) says: "Use gives meaning to housing, and at the same time meaning guides how housing is used." Because use has such a vital function in exposing the meaning of people-environment relations, this research takes the activities people perform in their dwelling and residential environment as a starting point. People-environment relations are not static; they change over time. People's activities change in time and over the life course. For example, a child will play outside with other children; an adult will go to work. Also the settings can change; as a student, one might live downtown in a small, single room. That same person, ten years later, might live in a single-family dwelling in a suburb. People build their own concept of home during their life. It is based on their ideas and expectations, but also influenced by their particular life events (Després, 1991a). Therefore, for a better understanding of the meaning of people-environment relations, it is important to have some notion of the context in which people live.

2.3 Context of people-environment relations

People-environment relations do not stand alone, they exist in a context. This context is shaped by culture, organisation, politics, economy and society in general (Bell *et al.*, 2001). Everyday activities in the dwelling and residential environment cannot easily be rendered as facts and figures. This is because the perceptions and experiences of people mainly define the meaning people attach to these activities. In turn, these perceptions and experiences are the result of a larger context. Without explaining the context in which dwelling occurs, dwelling becomes difficult to grasp (Pennartz, 1981). The life course approach tries to connect individual life events and life trajectories with this context. During people's lives they live through different events, building up certain social, economic and cultural assets (Bourdieu, 1984; Reijndorp, 2004). These assets are the result of both individual doing and the context in which

a person lives. The life course is defined as the way in which an individual progresses through various stages in various careers in life. This concept does not have the normative connotations which are often associated with the concept of life cycle (Mulder, 1993). In this study we use some of the ideas of the life course approach to draw the context in which people-environment relations take place.

2.3.1 Life course approach

The life course approach has two important assumptions that can also be relevant to the meaning of dwelling.

1. *People pursue goals in life* – Some general goals can be identified. Two important ones are physical well-being and social approval. In real life general goals become concretised into specific goals towards which people strive, and the instruments for reaching general goals can become goals themselves. These specific goals are called preferences. While goals are assumed to be general, preferences are not. Preferences may vary among individuals and during an individual's life course (Mulder, 1993).
2. *There is a relationship between people's behaviour and their preferences* – It is assumed that (to a certain extent) people behave rationally. From that point of view, behaviour is regarded as value-oriented and goal-directed. That means that people are more likely to act in a certain way, if they believe that those actions will positively contribute to reach their goals. People organise their values hierarchically in a value structure. The relative importance of various values together guides action (Schwartz, 2006). Still, people rank an activity higher if they believe that the activity contributes to reaching a highly valued goal, compared to an activity that serves a less important goal (Lindberg *et al*., 1987).

The life course approach indicates that life events, activities and values are to some extend related to one another. But what is the effect of individual life events on people's day-to-day lives and specifically the activities they perform in the dwelling and residential environment? Some activities do not seem to be influenced by life course, they are basic needs. For example every person needs to eat and to sleep. Other activities are more determined by the life course of a person. For example people with young children will probably spend more time on childcare than people without children or with adult children. So, personal features (like household composition) can affect which activities are performed. This also accounts for features of the residential environment. So, if a setting of the environment changes, also the activities could change to some extent. Therefore we need to see to what extent the features of the residential environment influence the activities people perform in their dwelling and residential environment.

2.3.2 Characterising life in a city centre, suburban and rural type of residential environment

According to many studies on everyday life, life in the city differs from that in suburbs or in rural types of residential environment (Reijndorp *et al.*, 1998; Reijndorp, 2004; Heins, 2002; De Wijs-Mulkens, 1999). To differentiate the types of residential environment, these studies describe in detail the spatial, economic and social features of different locations. Aspects like employment, places of entertainment and health-care facilities are used to differentiate locations. Also housing stock features like age, building density and the amount of green space in the residential environment are considered to be important in differentiating locations. They all assume that different locations afford different activities. For example, life in the city is assumed to be full of action. Karsten *et al.* (2006) describe the city as a creative place where cultural, social and economic streams come together. The level of facilities (employment, cultural, culinary etc.) is high and all these facilities are relatively close by. But also the proximity of friends is important. This makes it possible for city centre dwellers to combine various activities; for example having a good professional career, being able to go regularly to the theatre, concerts or cinema and being able to maintain a good social life. In all these different careers, self-development is an important value for the city centre dweller (Karsten *et al.*, 2006). Of all household types, one- and two-person households mostly prefer to live in the city because of the high level of the facilities available. Activities like going to cultural events and shopping play an important role in the preference for living in or very near the city centre (Lindberg *et al.*, 1987).

However, the city is regarded as unsuitable for raising children because of the congestion, air pollution, criminality and its large scale. By the time people start thinking about having a family or when they already have children who need to go to primary school, a quiet neighbourhood in green surroundings becomes more important than a high level of facilities close by (Bertholet, 1992). Suburban types of residential environment have more green space and a larger single-family housing stock. In contrast to city centres that have an image of being multi-functional, heterogeneous, diverse and full of character, suburbs have an image of being mono-functional, homogeneous, dull and without any special character. Suburbs have been rather negatively stereotyped by both the media and academic commentators. But the way suburban types of residential environment have grown and what they are today is far more complex than the stereotypes of mono-functionality and a boring traditional family lifestyle might cover (McDonogh, 2006). Instead, a suburb can also be characterised as functional and comfortable living. All facilities for the daily routines like going to work, doing daily errands and bringing children to school are well connected by highways and are within easy reach for the suburban resident. Suburban types of residential environment provide

comfortable dwellings with a maximum of square metres for a minimal price, compared to dwellings located in the city centre. Suburban types of residential environment have playgrounds for children. The city is close enough to enjoy going to the theatre or having a drink with friends in an outdoor café (Metaal, 2005). So, suburbs have mainly a residential function and could be characterised as mono-functional. But, whereas city centre dwellers are mainly focussed on the city they live in, suburban residents use their car to reach the different facilities. They are not focussed on one city but travel to different places to find the facilities they need (Reijndorp *et al.*, 1998). From that point of view suburbs are not isolated and lifeless types of residential environment.

Rural types of residential environment have different qualities compared to suburbs and especially city centres. Rural types of residential environment would provide green space, nature, quietness and a substantial single-family housing stock (Van Dam *et al.*, 2002). Because of the space, rural types of residential environment provide more possibilities to undertake space-consuming activities like keeping animals (Heins, 2002). Also activities like relaxing, outings in the countryside, being with family and exercising are associated with living in the countryside (Lindberg *et al.*, 1987). In rural types of residential environment one can enjoy the quiet and nature as well as having room for outdoor leisure activities. The literature even speaks of a rural idyll. These assumed qualities of rural types of residential environment would make not only families with children but everyone (who can afford it) prefer to live in a rural area (Heins, 2002).

2.4 Measuring the meaning of dwelling in different types of residential environment

Whereas the previous section discussed the divergent character of city centre, suburban and rural types of residential environments, this section first considers various ways of defining types of residential environment. The second section presents a conceptual structure that connects people's values to their choice behaviour: the means-end theory. This theory can provide a framework for measuring the meaning of activities in the dwelling and residential environment.

2.4.1 Defining types of residential environment

The characterisation of city centre, suburban and rural types of residential environment makes it clear that each type affords different user options. That is because each type of residential environment contains various features. A possible way to describe the residential environment in a compact and coherent manner is by using a set of physical-spatial (e.g. year in which most hous-

es are constructed or location with respect to the distance to the city centre) and socio-spatial (e.g. average household composition in the neighbourhood) factors. With these factors it is possible to classify residential environments more specifically in terms of a residential environment typology (Van Diepen and Arnoldus, 2003). In the Netherlands it is possible to categorise neighbourhoods using physical-spatial and socio-spatial factors. There are two main reasons for this. First, most Dutch neighbourhoods are planned and constructed on a large scale (a few hundred or even a few thousand houses at the same time). Secondly, information is available at the neighbourhood level about household composition, age and income. Within a residential environment typology different physical-spatial and socio-spatial features are combined into a compact description of the residential environment.

To create comprehensible categories is not easy. The first problem to tackle in categorising residential environments is the outline of the residential environment. The categorisation can be made at many different levels. Most divisions are either at the municipality, zip code or neighbourhood level. The choice of a certain level depends not only on the research question but often also on the data available. For example, not all municipalities have all relevant data available at the neighbourhood level. The second problem is similar and concerns the decision about which physical-spatial and social-spatial factors to include in the typology. Again, not all the information a researcher would like to include in the typology is always at hand. For example, in some cases information about educational level is available and in others not. So each typology uses different physical-spatial and social-spatial factors at a different level. This makes it very difficult to compare typologies with each other.

Using and interpreting residential environment typologies has to be done circumspectly. Planners and researchers create the typologies with the information available at the time of their research. The distinction researchers make in the typology between neighbourhoods will not automatically be recognised by the residents living in those neighbourhoods. This can lead to miscommunication of meaning. Specifically, if people prefer a certain residential environment typology this does not automatically mean that it will contain all facilities and features that are important to them (Pinkster and Van Kempen, 2002). For example, a person who highly values going to the theatre might still not want to live close to the theatre. He might prefer to live in a rural environment and travel for a visit to the theatre. Another point to take into consideration is that in many cases the housing market does not function optimally. Therefore, people cannot always live in the kind of residential environment they would prefer to live in. That, in turn, could create a discrepancy between the preferred and the actual residential environment typology. A last point of critique is the assumption that no variety within a typology could exist. In the Dutch context, plans are developed on a large scale. Neighbourhoods are planned and developed in one stream. Therefore aggregation

Figure 2.3 Residential environments in the Netherlands

will provide a reliable homogeneous picture of the physical-spatial factors within a residential environment typology. However, this certainly does not account for the social-spatial factors. Within one typology these can be very diversified (Van Diepen and Arnoldus, 2003).

Despite the limitations of categorising residential environments, this approach could still be used to create residential environment typologies. Using a typology allows us to include many factors of the residential envi-

Figure 2.4 Most distinguishing features of city centre, suburban and rural types of residential environment

City centre
- High building density
- Very high level of facilities (e.g. employment, education, institutions, shops, museums)

Suburban
- Average building density
- On the rim of the city
- Green space

Rural
- Low building density
- Little facilities
- Green space

ronment in just one variable. Much information about physical-spatial and social-spatial factors – for example, on number of inhabitants, employment, amenities and accessibility – is available at the zip code level. Therefore many researchers choose for a typology on zip code level. The physical-spatial factors that are part of the typology used in this survey are, among other things, the distance to the nearest city centre, information about building density, and the number of shops and other facilities in the area. The socio-spatial factors that determine whether an area is a city centre or rural type of residential environment are based on the number of inhabitants in a municipality and the ratio of working people to residents, among other things. This results in five typologies of neighbourhoods: city centres, centres of a village, a neighbourhood outside the city centre, neighbourhoods at the rim of the city or village (suburb) and neighbourhoods in rural areas (Bertholet, 1992; Brouwer and Ruiterman, 1992). This typology is widely used; for instance, the Dutch government uses it for policy documents. In order to differentiate locations most clearly, we have selected respondents who live in either in a city centre, suburban or rural type of residential environment. As Figure 2.3 shows, a city centre type of residential environment is rare in the Netherlands; only the city centres of large cities are included in this category. Of all Dutch households 5 per cent lives in such a city centre type of residential environment. For the suburban type of residential environment we included green urban areas and green areas in small cities. Approximately 13 per cent of all Dutch households live in those areas. Finally, for the rural type of residential environment we have included villages and areas outside the built-up area. Approximately 16 per cent of all Dutch households live in such a rural type of residential environment. Most Dutch households (66%) live in a type of residential environment in between these three categories; not really urban or rural. Figure 2.4 summarises the main characteristics of the three types of residential environment.

2.4.2 Means-end theory

The different types of residential environment have different features and therefore might have different affordances. But in what way are people's ac-

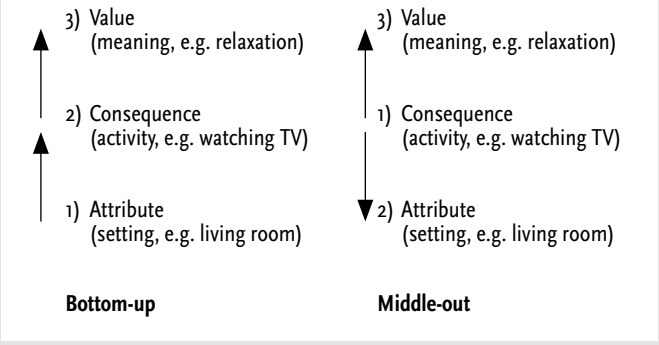
tivities in the dwelling and residential environment connected to the features of the dwelling and residential environment? Moreover, in what way do people attach meaning to these activities in the dwelling and residential environment?

A theoretical and conceptual structure to connect consumers' values (meanings) and their choice behaviour (activities) is the means-end chain. Means-end theory finds its origin in consumer science. Means are concrete objects or activities in which people engage. Ends are valued states of being, like security and happiness. A means-end chain is a model which tries to connect products people choose to the underlying values and goals of that choice. Two assumptions are made about consumer behaviour: (1) values play a dominant role in guiding choice patterns, and (2) people handle the tremendous diversity of products by grouping them. More general assumptions also apply, namely that consumer actions have consequences and consumers learn to associate particular consequences with particular actions (Gutman, 1982). People pursue certain goals in their lives. Behaviour is regarded as value-oriented and goal-directed. People are believed to have a certain belief-value structure. This structure brings together their values, goals and different means to reach their goals (Gärling and Friman, 2001); for example the dwelling feature garden helps them attain the value freedom. People act according to this belief-value structure. The central idea in means-end theory is that consumers choose the actions which produce the desired consequences and which minimize the undesirable consequence.

The means-end chain consists of three different levels. The basic assumption of the model is that consumers choose actions producing desired consequences. Values (1) imbue consequences (2) with positive or negative valence. This linkage between value and consequence is essential. In order to realize a desirable consequence, a certain good must be consumed. A good contains different attributes (3). In order to make the right choice between the different goods with different consequences, the consumer must learn which goods possess the attributes producing the desirable consequence. Therefore the second essential link is the one between consequences and attributes of goods. These means-end chains are constructed from the bottom up; a respondent can select an attribute and then the interviewer asks the respondent what it means to him (Reynolds and Gutman, 1988). This method is called laddering (see Figure 2.5). During laddering interviews sometimes a respondent immediately gives a value, other times it just comes down to consequences. There is also no clear distinction between the line where consequences stop and values begin. Therefore this framework of step 1, 2 and 3 is not rigid (Van Rekom and Wieringa, 2007). By using this method a researcher gets information about the motives behind a certain choice of the consumers and also about their cognitive structures.

The means-end chain focuses on products people choose in order to reach

Figure 2.5 Means-end chain (bottom-up) and goal structure (middle-out)

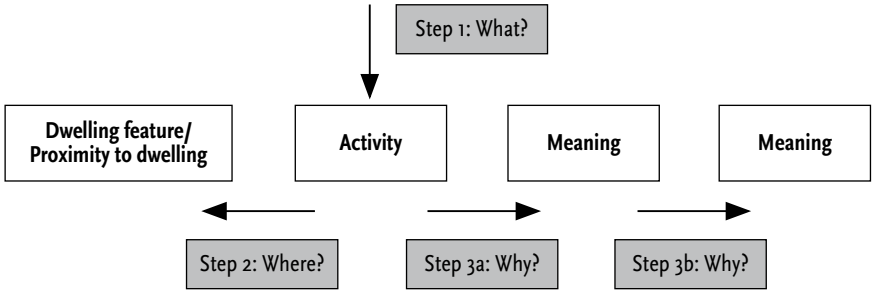


desired end states. The focus of this conceptual framework is on activities in the dwelling and residential environment. These activities we define as *dwelling*, which is a set of everyday activities in a subsetting of the environment. The means-end chain can be understood as a bottom-up approach; the starting point are attributes. Pieters *et al.* (1995) proposed an alternative approach of the means-end chain, a goal structure. The starting point of a goal structure is the consequence; (1) what people want to achieve. The laddering technique is then used to see (2) how people think they can get what they want and (3) why they want it. The goal structure can be understood as a middle-out approach (see Figure 2.5). Pieters presents a study of people who want to lose weight; that is their goal. Then he asks his respondents how they think they can lose weight and why they want to lose weight. With this information it is possible to make a goal structure. A goal structure is composed of a set of goals that is relevant to behaviour. While the assumptions are the same as in means-end theory, the difference is that Pieters focuses on activities. He emphasises the importance of looking at the entire set of an individual's goals that are relevant to a particular behaviour. One kind of behaviour can serve multiple goals: for example, going to the gym regularly can serve the goal of better health as well as a more attractive appearance. The links among various elements in the goal structure can help interpret the meaning of behaviour (Pieters *et al.*, 1995), because a goal structure shows the different goals people have and the relations of conflict and compatibility among these goals.

2.4.3 Making the meaning of dwelling operational

This study focuses on activities in the dwelling and residential environment. The study attempts to trace the relation between activities and sub-settings (dwelling or residential environment feature), on the one hand, and the relation between activities and meanings on the other. Here, we refer to these relations as *the meaning of dwelling*. Therefore we combine the means-end chain with the goal structure to form what we call a meaning structure. *A meaning structure* is a network of interrelated meanings. It comprises of a set of meanings that are relevant to a given behaviour (activities in the dwelling or residential environment) and attribute (dwelling features). To create this meaning structure we use the laddering technique. According to Coolen and Hoekstra (2001) the laddering technique provides a good method to reproduce mean-

Figure 2.6 Creating a meaning structure



ing structures. The first task presented to the respondents is to select which dwelling activities are important to them. They are then asked where they mainly perform this activity, thereby establishing a link between the activity and the dwelling feature. The third step is to ask why that activity is important to the respondent. The same procedure is used for activities in the residential environment. Step two is different: instead of connecting the activity to a residential environment feature, the activity is connected to the vicinity of the dwelling. The reason for this link is that many activities in the residential environment already imply the space where the activity takes place: for example, to go to the tennis club, to go to work. In order to differentiate activities in the direct residential environment (very close to the dwelling) from activities far away from the dwelling we ask about the travel time. In other words, does one go to the tennis club within five minutes travel time from the dwelling or does it takes a person half an hour to go to the tennis club? These three steps (what, where and why) create a meaning structure. It shows which activities in the dwelling and residential environment are important to people and also gives insight into the reason why. Figure 2.6 summarises the steps for creating meaning structures.

2.5 Conceptual framework

In the final section of this chapter we try to bring together all of the concepts presented so far. This research focuses on people-environment relations from an ecological perspective. People-environment relations are assumed to be reciprocal. In other words, people respond to meaningful features in the environment and through their use give meaning to the environment. Meaning lies within the relation between activities of people and the features of the environment. In this research we only look at a sub-setting of the environment: we focus on everyday activities in the dwelling and residential environment. The context of dwelling is narrowed down to socio-demographic variables, dwelling and residential environment features.

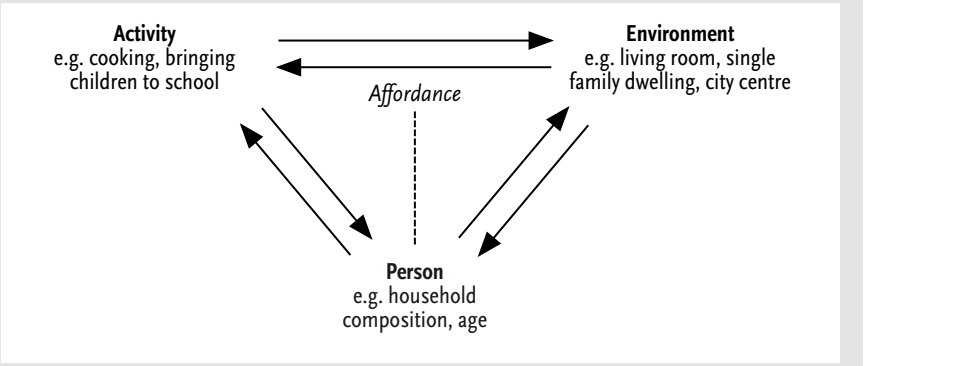
Pinkster and Van Kempen (2002) conclude that while the variables of age, income, household composition and level of education may be traditional explanatory variables, they remain good predictors for housing preferenc-

es. That is why we use these variables to draw the context of respondents. Income influences the range of choice a person has in realising his/her housing preferences. In general people with a high income will have more alternatives to choose from in a given housing market than people with a low income. Age influences different careers. People in their early twenties will probably be at the beginning of their labour market career and therefore move easily from one place to another. When people get older and settle down one might expect that both their labour market career and residential career will be less dynamic. As for household composition, the number of people in a household will determine to some extent the number of rooms that are required. For example, most people prefer to have a dwelling in which each person of the household can have his/her own private room (Gibler and Nelson, 2003; Clapham, 2005). Finally, the level of education provides information about the labour market career. There is a positive relation between level of education and position on the labour market. In general, people with a high level of education have a better position on the labour market, compared to people with a low level of education. As a result, the income prospects of people with a high level of education are better than those of people with a low level of education (Boumeester, 2004).

Some attributes (in our case dwelling and residential environment features) are so important to people that they won't accept a new dwelling if it does not have this specific attribute. This is called a non-compensatory decision rule (Gibler and Nelson, 2003). For the dwelling and residential environment the variables of location (e.g. city centre or rim of the city), neighbourhood (e.g. lively or quiet), dwelling type, tenure, garden, number of rooms and surface of the living room are used to describe the context. These variables have proved to be important or even non-compensatory attributes in housing preference research (Boumeester *et al.*, 2008). For the type of residential environment, it is quite obvious that city centre types of residential environment have different features compared to suburban or rural types of residential environment. These differences can be physical-spatial, like different housing stocks, but also socio-spatial, such as different levels of job opportunities. Another example is the high level of facilities such as restaurants, bars and theatres present in city centres. This might lead to meanings like an exiting life and personal development, which can be expected to be more prominent for city centre dwellers compared to people living in a suburban or rural type of residential environment. On the other hand meanings like peace and quietness might be more prominent for people living in a rural type of residential environment. Different user options of the three types of residential environment might lead to different meanings of dwelling.

This research differs from many studies on the meaning of home, because it does not see home as a holistic concept. Instead it tries to unravel the concept of home (Rapoport, 2001). Dwelling is being unravelled by first looking in

Figure 2.7 Conceptual framework for the meaning of dwelling



detail at which everyday activities are important to people in their dwelling and residential environment. Then this study looks at the sub-setting of the environment (dwelling feature or proximity to the dwelling) in which these activities take place. The third step is to see which meanings people attach to these activities (indicated by the arrows in Figure 2.7). Figure 2.7 represents the conceptual framework for the meaning of dwelling.

Summarising, the most important assumptions of this conceptual framework are as follows:

- Individuals pursue goals in their lives, and their actions are goal-oriented. Therefore their actions, ideas and preferences are aimed at reaching these goals.
- Dwelling is a set of daily activities in the dwelling and in the residential environment.
- The specific meanings of dwelling are to be found in the relations between activities of people and features in the dwelling or in the residential environment.
- The context of dwelling is important to gain a better understanding of how residents understand dwelling.
- Different types of residential environment might afford different meanings of dwelling.

3 Describing the context of dwelling

In order to be able to understand and interpret the meaning that people attach to everyday activities in their dwelling and residential environment, it is important to have some notion of the context in which these activities take place. This chapter attempts to describe that context. Context is a wide-ranging concept; it could include anything except people's activities and the meanings they attach to them. To keep the context manageable for research, it needs to be narrowed down. Three types of context variables are especially relevant when describing the context of dwelling. First, socio-demographic variables provide information on age, household composition and income, for instance. These variables have proved to be relatively good predictors in housing choice and housing preference research (Pinkster and Van Kempen, 2002; Van Diepen and Arnoldus, 2003). Socio-demographic variables are important indicators of stages in people's life course (Clark and Dieleman, 1996). For instance, they indicate whether people are in a family-forming stage or in an empty-nester phase. People's stage in life has implications for their housing needs. In the phase of family formation, people might require some extra space in the dwelling, whereas once the children have left the home, less space might be needed. Using different socio-demographic variables can provide insight into important individual life events and life trajectories of the respondents (Mulder, 1993). That insight, in turn, will help in understanding people's housing choice. Secondly, variables of dwelling features describe, for example, the dwelling type, number of rooms and tenure. These features have also proved to be important in people's housing choice. Moreover, dwelling type, number of rooms and tenure can be considered non-compensatory dwelling features (Boumeester *et al.*, 2008). In other words, people will not accept a dwelling if that feature is not present. For example, people would only accept a single-family dwelling with at least five rooms (number of rooms) that they can buy (tenure). These dwelling features provide information about the kind of housing people (would prefer to) live in. Third, variables of residential environment features give information on, the level of facilities in the neighbourhood and the building density, among other things. These variables are all included in the type of residential environment. For example, the city centre type of residential environment stands for a high level of facilities close by and a relatively high building density. A rural type of residential environment stands for a low level of facilities close by and a relatively low building density. (See Section 2.4.1 for a characterisation of the three types of residential environment.)

A portion of the data presented in this thesis is derived from a Housing Preference Survey (Boumeester *et al.*, 2006). The survey on the meaning of dwelling was done as a follow-up to the Housing Preference Survey. For the follow-up study, Appendix 1 describes in detail the survey design and the collection and classification of the laddering data. The data from the Housing Preference Survey give insight into both the household and the dwelling char-

acteristics of respondents. The entry point in creating the meaning structures is the activities people perform in and around their dwelling and in the residential environment. So the entry point is the existing dwelling situation of the respondents. Some people are satisfied with their current dwelling situation, whereas others are not and are looking for a new dwelling. That means that besides the current dwelling situation, also the preferred dwelling situation of people who are willing to move needs to be taken into account. In creating the meaning structures we have used the current dwelling situation for people who are not willing to move. For people who are willing to move, we have asked them to relate the activities to their preferred dwelling situation. In order to see whether we can take both groups together in analysing the meaning structures, we need to see to what extent the current and preferred dwelling situation differs. If the difference is small, we will regard them as one group. Besides, comparing the current and preferred dwelling situation makes it possible to see to what extent a gap exists between the actual and preferred level of housing. The first section describes some core household characteristics of the respondents. It also explains in detail their current dwelling situation. The second section describes the preferred dwelling situation for those respondents who are willing to move. The third section gives an overview of the amenities that respondents who are willing to move would like to have in the vicinity of their new dwelling.

3.1 Key features of the respondents

The data presented in this section are all derived from the Housing Preference Survey (HPS). One of the selection criteria of the HPS is that all respondents must have an above-average income (at least 1,600 euro after tax per month[1]). Over 60 per cent of all Dutch households have an above-average income. To only look at households with an above-average income was a deliberate decision. We assume that people with an above-average income have some choice on the housing market. That makes it easier to discuss their motivations for the current or preferred dwelling situation.

The personal context of the respondents is described by the socio-demographic variables age, household composition, income and level of education. The context of the dwelling and residential environment is described by the variables dwelling type, having a garden, number of rooms, size of the living room, tenure, type of neighbourhood and type of architecture. In this research we are especially interested in ascertaining to what extent activities and meanings differ per type of residential environment. Therefore, all context

1 This is the average household income after tax in 2005 according to the Dutch Budget Institute, NIBUD.

variables are subdivided by type of residential environment. Table 3.1 gives an overview of the variables. A chi-square test helps assess the differences in context variables between the three types of residential environment. All variables that differ significantly per type of residential environment ($p<0.001$) are indicated by an asterisk (*) in Table 3.1.

3.1.1 Household features of the respondents

The questionnaire was administered to just as many men as women. We assume that there is a relation between income, age, household composition and level of education. First, since relatively many young people will have just started their professional career, they will have a relatively low income. Secondly, since young people relatively often live alone or in a small household, they are more likely to live in a one- or two-person household. Thirdly, there is a positive relation between income and level of education: the higher the level of education, the more likely people are to have a high income (Clark and Dieleman, 1996). Only respondents with an above-average income took part in the HPS. As a result, young people (aged 18-29) and one-person households are under-represented in this sample. On the other hand, both the share of people aged over 55 and the share of people with a high level of education are relatively large. All socio-demographic variables (except for sex) differ significantly ($p<0.001$) per type of residential environment. In the city centre over 50 per cent of the respondents are aged over 55, live in a two-person household, have a high income and have a high level of education or university degree. The socio-demographic variables of respondents living in either a suburban or rural type of residential environment are different from those of city centre dwellers. Approximately 40 per cent of the respondents in a suburban or rural type of residential environment are aged 40-54; over 50 per cent live in a three- or more person household, have a low or middle income and have an intermediate or high level of education.

3.1.2 Dwelling features

All dwelling features (except for tenure) differ statistically significant among the three types of residential environment. This is the result of the classification of the three types of residential environment. Since city centres have relatively high building densities, there are more multi-family dwellings in city centres. As a consequence, relatively fewer people will have a garden. Another consequence of the higher building density is that there will be more traffic and more people moving about. So, relatively many neighbourhoods will be classified as busy or lively. In suburban and rural areas, most dwellings are single-family dwellings. The Dutch standard for a single-family dwelling in a row has four or five rooms and a living room of 33 square metres (Boumeester

Table 3.1 Characteristics of all respondents, specified per type of residential environment

	City centre (N=235)	Suburban (N=202)	Rural (N=222)	Total (N=659)
Sex				
Man	126 (53.6%)	108 (53.5%)	111 (50.0%)	345 (52.3%)
Woman	109 (46.4%)	94 (46.5%)	111 (50.0%)	314 (47.7%)
Age*				
18-29 years	7 (3.0%)	11 (5.4%)	6 (2.7%)	24 (3.6%)
30-39 years	26 (11.1%)	40 (19.8%)	53 (23.9%)	119 (18.1%)
40-54 years	80 (34.0%)	81 (40.1%)	88 (39.6%)	249 (37.8%)
55+ years	122 (51.9%)	70 (34.7%)	75 (33.8%)	267 (40.5%)
Household composition*				
One person	35 (14.9%)	22 (10.9%)	13 (5.9%)	70 (10.6%)
Two persons	138 (58.7%)	71 (35.1%)	83 (37.4%)	292 (44.3%)
Three or more persons	62 (26.4%)	109 (54.0%)	126 (56.8%)	297 (45.1%)
Income*				
Low (1-1.5 times average)**	28 (11.9%)	69 (34.2%)	83 (37.4%)	180 (27.3%)
Middle (1.5-2 times average)	54 (23.0%)	73 (36.1%)	72 (32.4%)	199 (30.2%)
High (> 2 times average)	123 (52.3%)	40 (19.8%)	56 (25.2%)	219 (33.2%)
Unknown	30 (12.8%)	20 (9.9%)	11 (5.0%)	61 (9.3%)
Level of education*				
Low	23 (9.8%)	30 (14.9%)	47 (21.2%)	100 (15.2%)
Intermediate	45 (19.1%)	69 34.2%)	87 (39.2%)	201 (30.5%)
High	94 (40.0%)	74 (36.6%)	64 (28.8%)	232 (35.2%)
University	70 (29.8%)	21 (10.4%)	17 (7.7%)	108 (16.4%)
Unknown	3 (1.3%)	8 (4.0%)	7 (3.2%)	18 (2.7%)
Dwelling type*				
Single-family dwelling	106 (45.1%)	173 (85.6%)	207 (93.2%)	486 (73.7%)
Multi-family dwelling	129 (54.9%)	29 (14.4%) 15	(6.8%)	173 (26.3%)
Garden*				
Yes	90 (38.3%)	176 (87.1%)	211 (95.0%)	477 (72.4%)
No	145 (61.7%)	26 (12.9%)	11 (5.0%)	182 (27.6%)

et al., 2006). Single-family dwellings (in a row) make up a large share of the housing stock in the suburban and rural types of residential environment. That is why most of the dwellings fit that profile in the suburban and rural types of residential environment. The majority of respondents (80%) own their dwelling, regardless of where they live. This probably is a consequence of the income criteria of the HPS. The higher people's income, the more likely they are to own a dwelling (Boumeester, 2004). Thus, only tenure and sex do not differ between the three types of residential environment.

The variable 'neighbourhood' conforms well to the variable 'type of residential environment': the majority of city centre dwellers describe their residential environment as busy or lively, whereas the majority of respondents living in a suburban or rural type of residential environment describe their neighbourhood as quiet or even silent. The majority of respondents live in a dwelling with traditional architecture. This is defined as a dwelling with a pitched roof. Most single-family dwellings in the Netherlands would fall under this

	City centre (N=235)	Suburban (N=202)	Rural (N=222)	Total (N=659)
Number of rooms*				
1-3 rooms	81 (34.5%)	14 (6.9%)	17 (7.7%)	112 (17.0%)
4-5 rooms	111 (47.2%)	136 (67.3%)	122 (55.0%)	369 (56.0%)
6 or more rooms	43 (18.3%)	52 (25.7%)	83 (37.4%)	178 (27.0%)
Size of living room*				
Less than 30 m²	50 (21.3%)	39 (19.3%)	53 (23.9%)	142 (21.5%)
30-45 m²	100 (42.6%)	114 (56.4%)	120 (54.1%)	334 (50.7%)
46 m² or more	85 (36.2%)	49 (24.3%)	49 (22.1%)	183 (27.8%)
Tenure				
Buying	181 (77.0%)	161 (79.7%)	184 (82.9%)	526 (79.8%)
Renting	54 (23.0%)	41 (20.3%)	38 (17.1%)	133 (20.2%)
Neighbourhood*				
Silent	17 (7.2%)	34 (16.8%)	41 (18.5%)	92 (14.0%)
Quiet	71 (30.2%)	110 (54.5%)	129 (58.1%)	310 (47.0%)
Lively	100 (42.6%)	47 (23.3%)	40 (18.0%)	187 (28.4%)
Busy	46 (19.6%)	8 (4.0%)	10 (4.5%)	64 (9.7%)
Unknown	1 (0.4%)	3 (1.5%)	2 (0.9%)	6 (0.9%)
Architecture*				
Traditional	112 (47.7%)	152 (75.2%)	205 (92.3%)	469 (71.1%)
Modern	102 (43.4%)	44 (21.8%)	11 (5.0%)	157 (23.8%)
Experimental	10 (4.3%)	4 (2.0%)	3 (1.4%)	16 (2.4%)
Other	11 (4.7%)	2 (1.0%)	3 (1.4%)	17 (2.6%)
Willingness to move*				
No, don't want to move	141 (60.0%)	54 (26.7%)	77 (34.7%)	272 (41.3%)
Yes, want to move	93 (39.6%)	111 (55.0%)	113 (50.9%)	317 (48.1%)
Don't know	1 (0.4%)	37 (18.3%)	32 (14.4%)	70 (10.6%)

*) Chi-square test $p<0.001$

**) Average household income: 1600 euro after tax per month (NIBUD, 2005), a requirement of the HPS

category. Modern architecture is defined as a dwelling with straight lines and a flat roof. Most multi-family homes would fall under this category. This probably explains why in the city centre over 40 per cent of the respondents indicated that they live in a dwelling with modern architecture, compared to 22 per cent in suburban and only 5 per cent in rural areas. The third category is experimental architecture, which is defined as a dwelling with an unusual shape. The number of respondents who live in a dwelling with experimental architecture is very low in all three types of residential environment.

It seems that many respondents are not totally satisfied with their current dwelling situation. Almost 50 per cent of all respondents answered yes when asked, Would you accept a dwelling that would satisfy all your dwelling preferences? This is a consequence of the sampling for the HPS (see Appendix 1 for details on the sample). Part of the population of the HPS was especially selected for their willingness to move. However, only 20 per cent of all respondents think they actually will move in the coming two years. This

might indicate a gap between the preferred dwelling situation and the current one. Apparently most people who are willing to move do not have enough opportunity or else they experience too many constraints to bring the divergent situations closer together.

3.2 Preferred dwelling situation of respondents who are willing to move

Before discussing the preferred dwelling situation of respondents who are willing to move, we shall briefly characterise their household features and current dwelling situation. We compare these features with those of the respondents who do not want to move. In order to see whether we can analyse the meaning structures of people who are willing to move together with those who are not willing to move, we need to test the differences between the two groups. Besides that, we are also interested in possible differences among the three types of residential environment. Log linear analysis is a technique that investigates the relation among several categorical variables. For that reason, we use log linear analysis to examine whether a three-way interaction between type of residential environment, willingness to move and socio-demographic and dwelling features exists. For household and dwelling features, we use the same categorical variables as in Table 3.1.

3.2.1 Comparing household features and current dwelling situation of respondents willing to move

As mentioned in the first section, approximately 50 per cent of all respondents would accept a dwelling that would satisfy all their dwelling preferences. Appendix 2 describes the household features and current dwelling situation of the respondents who are willing to move and the same for the respondents who do not want to move. We now want to see to what extent there are differences between the two groups. For example, do people who are willing to move live in the same kind of household as people who are not willing to move? Or do people who are willing to move live in a rental dwelling more often than people who are not willing to move?

The results show that there are no three-way interactions, indicating that the relationship between type of residential environment and socio-demographic variables and dwelling features is not affected by willingness to move. However, there are some two-way relations between willingness to move and socio-demographic variables and dwelling features. As shown in Appendix 3, willingness to move is dependent upon: type of residential environment, age, dwelling type, size of living room and tenure. City centre dwellers are less likely to be willing to move than people living in a suburban or rural type of

residential environment. Respondents aged 40-54 are relatively more likely to be willing to move compared to the other age categories. Respondents living in a multi-family dwelling are more likely to be willing to move, than people living in a single-family dwelling. Also respondents who live in a dwelling with a small living room (smaller than 30 square metres) are more likely to be willing to move than respondents living in a dwelling with a larger living room (more than 30 square metres). Finally, respondents who own their dwelling are less likely to be willing to move.

3.2.2 Preferred dwelling situation

We now take a closer look at the preferred dwelling situation of the respondents who are willing to move. A chi-square test shows whether there are differences in preferred dwelling features among the three types of residential environment. All variables that significantly differ per type of residential environment (p=<0.001) are marked with an asterisk (*) in Table 3.2.

For the majority of people who are willing to move, their preferred dwelling situation strongly resembles the current dwelling situation of respondents who are not willing to move. That is, it is very similar to the mode, or the most frequently mentioned category, of those without a propensity to move. The observation that willingness to move is dependent upon certain dwelling features – namely tenure, size of the living room and dwelling type – indicates that people tend to move from a rental dwelling to an owner occupied dwelling. People tend to move from a unit with a small living room into one with a larger living room. And people who live in a multi-family dwelling tend to move to a single-family dwelling.

In short, most people who are willing to move want to buy their next dwelling. They prefer a dwelling with a living room of 30-45 square metres, four or five rooms with traditional architecture and a garden. The dwelling should be in a quiet or lively neighbourhood. The majority of all respondents prefer to move to a type of residential environment like the one they currently live in. So, city centre dwellers would like their next dwelling to be in the city centre, while suburbanites would like theirs to be at the rim of a city. By the same token, people living in a rural area would like their next dwelling to be within or outside a small municipality. There is a significant difference in preference among the three types of residential environment with respect to a garden. Approximately 55 per cent of city centre dwellers would like to have a garden. However, this share is smaller than for people who live in a suburban or rural type of residential environment. Respondents who live in a rural area have the clearest picture of their future dwelling. For them, the category ‘no preference’ ranks lowest on all preferred dwelling features compared to the response of people already living in a suburban or city centre residential environment. These analyses show that the current dwelling features of peo-

ple who are not willing to move are similar to the preferred dwelling features of people who are willing to move. That is why we take both groups together when we compile the meaning structures in Chapters five and six.

3.2.3 Preferred amenities close to the dwelling

Besides dwelling features, the level of amenities in the residential environment is also important in people's housing choice. This section shows which kind of amenities people who are willing to move would like to have close to their dwelling. (See Appendix 4 for an overview of all preferred amenities close to the dwelling, subdivided by type of residential environment.) The majority of all respondents find it important to have shops for daily errands close by. Also, many respondents mentioned the proximity of a park as important. Respondents living in a suburban or rural type of residential environment more often mentioned the importance of a nearby school. This difference is probably due to the fact that relatively more people with young children live in either a suburban or rural type of residential environment. The importance of having leisure facilities like restaurants, cafés, theatres and cinemas in the vicinity is mentioned most by city centre dwellers. So they would like to have these facilities close to their next dwelling too. City centre dwellers also mentioned the importance of having a train station close by more often than respondents living in the other two types of residential environment.

3.3 Conclusion

The respondents who participated in the Housing Preference Survey have some specific characteristics. Only people with an above-average household income took part in this research. As a consequence, relatively few young people (aged 18-29) and relatively many people aged over 55 participated. Also relatively few one-person households took part. The current dwelling situation of most respondents can be regarded as rather good. It seems that the majority of the respondents have already taken their first steps in their housing career. The further advanced people are in their housing career, the more likely they are to own their dwelling and consume more housing services (Boumeester, 2004). The majority of the respondents live in an owner-occupied single-family dwelling, with four or five rooms, a living room of 30-45 square metres and a garden. People who live in a suburban or rural type of residential environment or people who are aged 40-54 are more often willing to move. Also people with a small living room (less than 30 square metres), a rental dwelling or a multi-family dwelling are more often willing to move. They would like to move to a dwelling that is very similar to the pro-

Table 3.2 Variables of the preferred dwelling situation, specified per type of residential environment in people who are willing to move

	City centre (N=93)	Suburban (N=111)	Rural (N=113)	Total (N=317)
Tenure				
Buying	61 (65.6%)	78 (70.3%)	79 (70.0%)	218 (68.8%)
Renting	5 (5.4%)	14 (12.6%)	17 (15.0%)	36 (11.4%)
No preference	24 (25.8%)	19 (17.1%)	17 (15.0%)	59 (18.6%)
Missing	4 (4.3%)	0	0	4 (1.2%)
Garden*				
Yes	52 (55.9%)	80 (72.1%)	97 (85.8%)	229 (72.2%)
No	18 (19.4%)	18 (16.2%)	10 (8.8%)	46 (14.5%)
No preference	19 (20.4%)	13 (11.7%)	6 (5.3%)	38 (12.0%)
Missing	4 (4.3%)	0	0	4 (1.2%)
Architecture				
Traditional	44 (47.3%)	67 (60.4%)	76 (67.3%)	187 (59.0%)
Modern	19 (20.4%)	24 (21.6%)	19 (16.8%)	62 (19.6%)
Experimental	14 (15.1%)	11 (9.9%)	10 (8.8%)	35 (11.0%)
No preference	12 (12.9%)	9 (8.1%)	8 (7.1%)	29 (9.2%)
Missing	4 (4.3%)	0	0	4 (1.2%)
Number of rooms				
3	15 (16.1%)	16 (14.4%)	15 (13.3%)	46 (14.5%)
4-5	59 (63.4%)	75 (67.6%)	65 (57.5%)	199 (62.8%)
6+	15 (16.1%)	20 (18.0%)	33 (29.2%)	68 (21.5%)
Missing	4 (4.3%)	0	0	4 (1.2%)
Size of living room				
Less than 30 m^2	7 (7.5%)	11 (9.9%)	17 (15.0%)	35 (11.0%)
30-45 m^2	54 (58.1%)	77 (69.4%)	70 (61.9%)	201 (63.4%)
46 m^2 or more	28 (30.1%)	22 (19.8%)	26 (23.0%)	76 (24.0%)
Missing	4 (4.3%)	1 (0.9%)	0	5 (1.6%)
Neighbourhood*				
Silent	14 (15.0%)	16 (14.4%)	24 (21.2%)	54 (17.0%)
Quiet	28 (30.1%)	68 (61.3%)	53 (46.9%)	149 (47.0%)
Lively	36 (38.7%)	22 (19.8%)	35 (31.0%)	93 (29.3%)
Busy	8 (8.6%)	3 (2.7%)	0	11 (3.5%)
No preference	2 (2.2%)	2 (1.8%)	0	4 (1.3%)
Missing	5 (5.4%)	0	1 (0.9%)	6 (1.9%)
Location*				
City centre	51 (54.8%)	5 (4.5%)	4 (3.5%)	60 (18.9%)
Rim of the city	19 (20.4%)	68 (61.3%)	24 (21.2%)	111 (35.0%)
Small municipality	6 (6.5%)	22 (19.8%)	57 (50.4%)	85 (26.8%)
Outside small municipality	6 (6.5%)	6 (5.4%)	25 (22.1%)	37 (11.7%)
No preference	6 (6.5%)	9 (8.1%)	2 (1.8%)	17 (5.3%)
Missing	5 (5.3%)	1 (0.9%)	1 (0.9%)	7 (2.2%)

* Chi- square test $p<0.001$

** There was no question in the HPS on whether the preferred dwelling had to be a single- or multi-family dwelling. Therefore this variable could not be included in this overview.

file captured by the modal category of the various current housing features of respondents who are not willing to move. The HPS only looks at current and preferred dwelling features and does not take into account the reasons why people want to move. Considering only dwelling features, the data indicate that even though relatively many people are willing to move, the gap between the preferred housing situation and the actual housing situation is quiet narrow. This gap seems to be mostly determined by space. In other housing preference research as well, space shows up as an important factor in housing mobility (Boumeester *et al.*, 2008).

The difference between the current type of residential environment and the preferred type of residential environment is also very small. City centre dwellers still want to live in the city, but in a lively or quiet neighbourhood. People living in a suburban type of residential environment prefer to live in a quiet neighbourhood at the rim of the city. And people living in a rural type of residential environment prefer to live in a silent, quiet or lively neighbourhood in a small municipality. This might indicate that once people have chosen to live in a certain type of residential environment or are used to living there, they are not very likely to move to another type of residential environment. Instead, they look for more space and quiet in the same type of residential environment. Facilities for going out, like restaurants, cinemas and theatres, are amply available in city centres. There is a relation between the preference to live in a city centre and the importance people attach to going out (Lindberg *et al.*, 1987; Reijndorp, 2004). This is also demonstrated in the present research: more city centre dwellers prefer to have facilities for going out, like restaurants, cafes and cinemas, close by compared to people living in either a suburban or rural type of residential environment. Facilities for daily errands and a park are important to the majority of all respondents. Summarising, the differences between the current and preferred dwelling situation of respondents are very limited. Because differences between current dwelling situation (of people who are not willing to move) and preferred dwelling situation (of people who are willing to move) are so limited, we take both groups together in constructing the meaning structures. Space is an important aspect in the difference between the current and the preferred dwelling situation. People who are willing to move would prefer a dwelling with more space (having more rooms and a larger living room) in a somewhat quieter neighbourhood.

4 Analysing activities in the dwelling and the residential environment

The differences among the city centre, suburban and rural types of residential environment have been described above in Chapter two. That short characterisation of the three types of residential environment showed that they have diverse features that might afford different activities. However, it was not yet clear to what extent people really do perform different activities in their dwelling and residential environment. The present chapter delves into the relation between people and their residential environment by looking at the activities people perform in their dwelling and residential environment. It also examines the extent to which these activities are determined by the type of residential environment, controlling for household characteristics and dwelling features. The research questions addressed in this chapter are as follows:

1. Which activities do people perform in their dwelling and residential environment?
2. To what extent do activity patterns exist?
3. To what extent do socio-demographic variables, dwelling features and residential environment features influence activities?

4.1 Activities in the dwelling and residential environment

To get a general idea of which activities are important for respondents in their dwelling and residential environment, all respondents were asked to mention some activities (a minimum of four and maximum of eight) they perform in both the dwelling and residential environment. The interviewers posed this as an open question and then selected the corresponding closed answering categories on the computer screen. This process is called field coding. They could choose among the following categories of activities in and around the dwelling: cooking, eating, being together with the nuclear family, working at home, cleaning, children playing, hobby, being outside, relaxing, entertaining guests, being at the computer, personal care, sleeping, maintenance of dwelling, gardening and 'other answers'. The same procedure was followed to determine which activities were important in the residential environment. The answering categories for activities in the residential environment are the following: going out, recreation, going to a club, bringing children to school, going to work, doing daily errands, fun shopping, visiting friends, doing sports and 'other answers'. On average, all respondents mentioned four different activities in the dwelling and four different activities in the residential environment. This number is relatively low, because the respondents were allowed to give more than four answers. The questionnaire in Blaise was programmed in such a way that the respondents had to mention at least four activities. Only after four activities had been entered in Blaise could the interviewer move on to the next question. The interviewers had already reported during the ses-

sions that some respondents found it hard to come up with four different activities. Of all respondents, 78 per cent were able to mention four different activities in the dwelling, while 95 per cent were able to mention three. Only 61 per cent were able to mention four different activities in the residential environment, but 88 per cent could mention three. So even though the interviewers had been trained and instructed to ask for at least four different activities in both the dwelling and the residential environment, the respondents found it difficult to do so, especially for activities in the residential environment. A large majority of the respondents did not have any problem naming three different activities in both the dwelling and residential environment. Practically all of the answers were easy to assign to one of the predetermined answering categories. Less than 1 per cent of all activities in the dwelling and residential environment were classified as 'other answers'. The latter are considered to be idiosyncratic and have thus not been included in the analyses. To limit the total number of different activities, some activities have been combined into one category. The overall category relaxing mainly consists of watching TV and reading. The activities handicrafts, playing music and doing odd jobs fall under the category hobby. Walking and cycling make up the largest share of the category recreation. And finally, going to a restaurant, café, theatre or cinema are all part of the category going out. Appendix 5 gives an overview of all the activities the respondents have named and the frequencies at which they were mentioned.

There is a wide variety of activities. Social activities are important both in the dwelling and in the residential environment. Some examples are entertaining guests, being together with the nuclear family, going out and visiting friends. Other important activities are leisure pastimes like watching TV, reading, being at the computer and cycling. But also activities related to housekeeping are important in everyday life. Some examples are cooking, cleaning and doing daily errands. The most frequently named activities (mentioned by over 200 respondents) in and around the dwelling are relaxing, cooking, gardening, eating, being at the computer and cleaning. Over 200 respondents mentioned daily errands, recreation, sports, going out, visiting friends and commuting as important activities in the residential environment.

4.2 Activity patterns

Because there is such a wide variety of activities, it might be useful to consider the extent to which activities form coherent groups. If coherent activity patterns do exist, these can be used in further analysis, thereby limiting the total number of activities to be discussed. We apply multiple correspondence analysis to ascertain whether there are activity patterns. Multiple correspondence analysis (HOMALS) examines the profiles of different nominal var-

iables, in this case the activities respondents have mentioned. It compares all different profiles in order to see whether the profiles are similar (homogeneous) or different. All these profiles are represented in one picture. The centroid of the solution represents the average profile. Variables with similar patterns lie close to one another, while variables with different patterns lie farther away from one another. The HOMALS solution shows whether the variables are homogeneous or heterogeneous; in other words, it shows whether respondents have mentioned similar or different activities (Van de Geer, 1988). To interpret the solution, we look first at the discrimination measures for all activities. Large discrimination measures correspond to a large spread among the categories of the activities and, consequently, indicate a high degree of discrimination between the categories of the activities along a dimension. The average discrimination measure for any dimension equals the percentage of variance accounted for in that dimension. Every discrimination measure above this average is considered to discriminate well on a particular dimension. Second, category quantification plots display the discrimination of variables, taking the separate answering categories (yes or no) into account.

The multiple correspondence analyses show that there are no dominant activity patterns. However, some groups of activities can be found. A four-dimensional solution can be found that together explains 28 per cent of all variance (see Appendix 6). The activities eating, working at home, cleaning, relaxing, sleeping, maintenance of the dwelling, gardening, going out and bringing children to school discriminate well on the first dimension. Taking the category quantifications into account, dimension one seems to discriminate two groups of activities. The first group with similar category quantifications consists of the activities maintenance of the dwelling, gardening, cleaning and bringing children to school. All these activities serve to keep the dwelling in good condition, except for bringing children to school. The second group, which has the opposite category quantifications, consists of the activities relaxing, going out, working at home and sleeping. These are all leisure activities, except for working at home. So, dimension one discriminates household chores, on the one hand, from leisure pursuits on the other. The second dimension is dominated by the activities eating, children playing, hobby, entertaining guests, sleeping, going out, going to a club, bringing children to school and daily errands. The two activities children playing and bringing children to school really differentiate from all other ones; they lie close to each other and far away from both the centroid of the solution and all other activities (Figure A6.1 in Appendix 6). Like in the first dimension, dimension two also discriminates 'necessary' behaviours like sleeping and eating, on the one hand, and leisure pursuits like going out, hobby and going to a club, on the other. Dimension three is dominated by cooking, cleaning, being outside, going to work, daily errands, fun shopping and visiting friends. The category quantifications for fun shopping, cleaning, cooking and daily errands are

similar. They are opposite to those for the activities visiting friends, going to work and being outside. Cleaning, cooking and daily errands are household chores. Visiting friends and being outside are leisure pastimes. Like dimension one and two, also dimension three discriminates household chores from leisure pastimes. Finally, the fourth dimension is dominated by working at home, hobby, relaxing, being at the computer, maintenance of the dwelling, recreation, going to a club, visiting friends, sports and fun shopping. The category quantifications for fun shopping, working at home, maintenance of the dwelling and sports are similar. These are opposite to those for relaxing, being at the computer, hobby, going to a club, recreation and visiting friends. These activities are too diverse to make a clear interpretation of dimension four.

In summary, the multiple correspondence analyses do not show dominant activity patterns. This is because the solution has a relatively low percentage of explained variance and the dimensions are rather difficult to interpret. Still, some groups of activities can be identified. The first and most obvious group consists of activities concerning family life. Bringing children to school and children playing dominate the second dimension. A second group of activities consists of household chores like cleaning, cooking and daily errands, best represented by dimension three. Finally, there is a group of leisure pursuits like going out, hobby and going to a club. Both dimension one and two show groups of leisure activities. All other activities do not differentiate enough to make coherent groups of activities. The groups of family life, household chores and leisure activities will be used to discuss the results of the analysis with respect to the effect of background variables on activities.

4.3 Effect of background variables on activities

To examine to what extent socio-demographic variables, dwelling and residential environment features influence activities, we estimated logistic regression models. Logistic regression analysis is a multiple regression, with the difference that it has a dichotomous outcome variable and the predictor variables are continuous or categorical. The basic formula is as follows (Field, 2000):

$$Y=\beta_0+ \beta_1X_1 +\ldots\beta_nX_n+\varepsilon_i$$

Logistic regression predicts the probability of Y (dependent variable) occurring, given known values of several predictor variables (X_n). In this section we look at the probability of an activity being mentioned given the known values of for example age, household composition and type of residential environment. There are three basic methods of running the regression analysis: Enter, Forward and Backward. In the Enter method, all predictor variables are entered simultaneously. In the Forward method, the current model is com-

pared to a model when that predictor is removed. If the removal makes a significant difference to how well the model fits the observed data, then that predictor remains in the model. The Backward method does exactly the opposite. It begins with all predictors and then tests whether any of these predictors can be removed from the model without having a substantial effect on how well the model fits the observed data (Field, 2000). In the logistic regression models for activities in the dwelling and residential environment, the predictors age, household composition, income, level of education, dwelling type, having a garden, type of residential environment, number of rooms, size of living room and tenure have been entered simultaneously. The variables of the dwelling features contain the current situation for the respondents who are not willing to move and the preferred dwelling feature for respondents who are. For example, the variable garden consists of three categories: garden, no garden or neutral. People who are not willing to move fall either into the category garden or the category no garden. People who are willing to move could choose between three categories to indicate their preference: garden, no garden or neutral (they have no preference for a dwelling with either a garden or a balcony). Each variable was included as a categorical variable. Each time the Enter, Forward and Backward method was used. Using three different methods of logistic regression analysis results in the most reliable model. In case the Enter, Forward (Wald) and Backward (Wald) method yield similar results, the results of the Enter method are presented. In case these three regression methods give different results, an iterative process is used. After running the analysis, the determinant with the highest (non-significant) *p*-value on the Wald test was removed and the analysis was redone. This process was repeated until only determinants were left that had a significant *p*-value on the Wald test. Every time the analysis resulted in more than one significant predictor, we tested for interaction effects. In some analyses the subgroups became too small to calculate the interaction effects. In the text below we will discuss the main effects; all significant interaction effects are described in Appendix 7. Finally, the Nagelkerke R^2 is presented. This measure indicates how well the predictors contribute to explaining the dependent variable (Field, 2000). Appendix 7 summarises the results of the logistic regression models for all activities in and around the dwelling and in the residential environment. The results of the logistic regression models will be discussed using the three groups of activities, namely family-life activities, household chores and leisure activities.

4.3.1 Family-life activities

The activities that concern family life are bringing children to school, children playing and being together with the nuclear family. In this thesis we consider family in a broad sense. Families might include for example reconsti-

tuted families, single parent families, and partners living together. In short the people who are living together as one household. Most people with young children fall into the age category 18-39 years (58% of the respondents aged 18-39 live in a family with one or more children). Therefore it is evident that both household composition and age are important factors for activities related to family life. Respondents living in a three- or more person household are more likely to have mentioned children playing, being together with the nuclear family and bringing children to school, compared to respondents who live in a one- or two-person household. People aged 18-39 are more likely to have mentioned children playing compared to people aged over 40. The same holds for bringing the children to school. For being together with the family, age is not a significant predictor. Regardless of the age of their children, people spend time together with their family members.

4.3.2 Household chores

The second group of activities concerns household chores, which include the following: cooking, cleaning, maintenance of the dwelling, gardening and daily errands. None of the predictors is significant for daily errands. This is not surprising, since everyone needs to do their daily errands.

There are five significant predictors for gardening. First, people who have a garden are more likely to have mentioned gardening than people without a garden. Second, people living in a single-family dwelling are more likely to have mentioned gardening, compared to people living in a multi-family dwelling. Third, people who live in a suburban or rural type of residential environment are more likely to have mentioned gardening compared to city centre dwellers. Fourth, people who live in a silent neighbourhood are more likely to have mentioned gardening than people in a lively neighbourhood. And fifth, people who live in a one- or two-person household are more likely to have mentioned gardening compared to people who live in a three- or more person household. The explanations for these effects are quite straightforward. One would expect a person who likes gardening to choose to live in a dwelling with a garden. Moreover, gardens are common in single-family dwellings, which are mainly located in suburban or rural types of residential environments. Furthermore, suburban and rural areas and quiet neighbourhoods generally have more green space, both public (e.g. woodlands or meadows) and private (gardens), compared to the city centre. So a person who likes gardening would probably also prefer to live in a green residential environment. The influence of household composition on gardening might be explained by the fact that families with children have to divide their time over work and childcare, leaving less time for other activities (Arnold and Lang, 2007).

There are also five significant predictors for cleaning. First, people aged 18-39 are more likely to have mentioned cleaning than people aged 40-54.

Second, people with a low level of education are more likely to have mentioned it than people with a high level. Third, people who already live in or would prefer to live in a single-family dwelling are more likely to have mentioned cleaning, compared to people in a multi-family dwelling. Fourth, people who have or would prefer to have a small living room (10-34 m^2) are more likely to have mentioned cleaning, compared to people who have or would prefer to have a living room of 35-44 square metres. Finally, people who live in or would prefer to live in a rental dwelling are more likely to have mentioned cleaning than people who own or wish to own their dwelling. These relations are somewhat difficult to interpret. However, the findings of Gram-Hanssen and Bech-Danielsen (2004) might help. In their research on house, home and identity, they found that especially women from a lower social class were concerned about keeping their house clean and tidy. People from a higher social class and with more financial means were not so concerned about keeping their house clean; they could hire someone to clean their house (Gram-Hanssen and Bech-Danielsen, 2004). This suggests that the concern for a clean and tidy house is related to income and social class. This model does not contain a variable indicating social class, and income is not a significant predictor in this model. Indirectly, we can look for a relation between cleaning and income. In general people with a high level of education have a higher income than people with a low level of education. This also accounts for age: people who have already worked for some years generally have a higher income than people who are just getting started on the labour market. Furthermore, there is also a positive relation between income and size of the living room and tenure. People with a higher income tend to live in a dwelling with a large living room and own their dwelling. People with a low income more often live in a rental dwelling. In this light, the relations from the logistic regression model seem to support the finding that people with a low income are relatively more concerned about keeping their house clean and tidy, compared to people with a high income.

Cooking has only one significant predictor: the type of residential environment. City centre dwellers are more likely to have mentioned cooking compared to people who live in either a suburban or rural area. This is striking, as one might expect city centre dwellers to go out more often and therefore to eat less often at home, whereby cooking would presumably be less important to them.

Maintenance of the dwelling also has only one significant predictor: a garden. People who have or would want a garden are more likely to have mentioned maintenance of the dwelling than people who do not have or want one. A possible explanation might be that for dwellings without a garden, which are mainly multi-family dwellings, most of the maintenance will be arranged by the homeowners association or the landlord. In contrast, most people in a single-family dwelling are responsible for maintenance themselves. Still, it

remains a bit unclear why garden is a significant predictor instead of dwelling type.

4.3.3 Leisure activities

The third group of activities consists of leisure activities. Many, both in and around the dwelling and in the residential environment, were named by the respondents. These include the following: hobby, being outside, relaxing, entertaining guests, being at the computer, going out, recreation, going to a club, visiting friends, sports and fun shopping.

The type of residential environment is a significant predictor for many leisure activities. First, type of residential environment is significant for entertaining guests and visiting friends. These two activities have opposite odds ratios. This finding is rather surprising, since one wouldn't expect a difference among inviting friends over and visiting friends. However, also Naess (2006) found this difference in his research. People who live in the suburbs have to travel farther to meet their friends. Therefore, meeting friends calls for planning. In contrast, city centre dwellers rely more on informal, coincidental meetings with friends in town and invite them to their homes (Naess, 2006). Also leisure activities like going out, going to a club, relaxing and fun shopping differ per type of residential environment. In the city centre there are more facilities for going out and fun shopping; city centre dwellers are more likely to have mentioned these activities compared to people who live in suburban or rural areas. This corresponds with other research findings (Lindberg *et al.*, 1987; Reijndorp 2004). People living in a rural area are more likely to have mentioned going to a club compared to city centre dwellers. A possible explanation might be that people living in rural areas are more community-oriented and express this by joining a local club. Young people aged 18-29 are more likely to go out than those over 30. People aged 18-39 are more likely to go fun shopping than those over 55. For the activity going to a club, this relation is the opposite: people over 55 are more likely to have mentioned going to a club compared to people aged 18-39. One- and two-person households are more likely to go fun shopping than people who live in a three- or more person household. A possible explanation might be that families with children have less time for leisure activities. Finally people with a middle or high income are more likely to have mentioned going out compared to people with a low income. Going out can be expensive; it might be that people with a low income cannot afford to go out on a regular basis.

Relaxing and hobby are both leisure activities in the dwelling. The odds ratio of the predictor age for relaxing is negative; respondents aged over 55 are less likely to have mentioned relaxing than respondents aged 18-39. Interestingly, this relation is the opposite for the activity hobby. The older the respondents are, the more likely they are to have mentioned the activity hobby. Taking a

closer look at these leisure activities, we can see that relaxing mainly consists of watching TV and reading books. These could be classified as passive leisure activities. Hobby, in contrast, covers a diversity of activities: handicrafts, playing music, car maintenance etc. These are active leisure activities. This suggests a possible explanation for the different odds ratios of the predictor age. We might assume that older people, especially those over 55, have more free time due to (early) retirement. In their free time, they want to be active and do all sorts of activities like handicrafts, playing music, photography and car maintenance. Younger people are building up a career and putting in more hours at work, so when they get home they prefer to sit and relax. The type of residential environment is not a significant predictor for hobby, even though one might expect it to be. Heins (2002) finds in her study that people with hobbies which take up much room, for example keeping animals, prefer a rural (spacious and green) residential environment. The hobbies mentioned in the present research are many and diverse. As a result, the category 'other hobbies' is large. Space-consuming hobbies like doing odd jobs, car maintenance and taking care of pets were mentioned relatively more often in a rural type of residential environment, though the frequencies are very low. Thus, even though a difference exists, the effect of type of residential environment might not be strong enough to become a significant predictor for the activity hobby. Type of residential environment is a significant predictor for the activity relaxing. City centre dwellers are more likely to have mentioned relaxing than people who live in a rural type of residential environment.

Recreation and sports are active leisure activities. It is interesting to see that the odds ratio of the predictor age has the opposite sign. For recreation it is positive: older people are more likely to have mentioned recreation than younger people. For doing sports it is negative: older people are less likely to have mentioned sports compared to younger people. Recreation mainly consists of cycling and walking, whereas sport is more about fitness, running, tennis etc. All activities are considered good for keeping your body fit. Cycling and walking can be done in the surroundings. Doing sports is more often connected with a club. It seems that both young and older people feel it is important to stay fit. The way in which they pursue this goal just seems to differ. Finally, people with a high income are less likely to have mentioned recreation compared to people with a low income. It might be that low-income people have a less tight time/space budget than those with a high income. For the latter, money might not be a problem, but the amount of free time is. So people with limited free time might look for an all-in-one experience such as going to a theme park. Whereas people with more free time could also go to a theme park, they tend to just go out for a walk or a spin on the bicycle.

Two leisure activities seem to stand out slightly with respect to their significant predictors: being outside and being at the computer. Dwelling type is the only significant predictor for being outside. People who live in or prefer to live

in a dwelling with a garden are more likely to have mentioned being outside, compared to people who live in or prefer to live in a dwelling without a garden. That might indicate that a garden affords being outside to a larger extent than a balcony. One would also expect that the type of residential environment would have been a significant predictor for being outside. In much housing preference research, outdoor activities are associated with a preference for a green residential environment. However, this does not show up in the present analyses; for none of the activities recreation, hobby and being outside was the type of residential environment a significant predictor. The activity being at the computer has two significant predictors: income and dwelling type. People who live in or prefer to live in a multi-family dwelling are more likely to have mentioned being at the computer than people who live in or prefer to live in single-family dwellings. People in the category income unknown are less likely to have mentioned being at the computer than people with a low income. There is not a clear explanation for either of these effects.

4.3.4 Other activities

Some activities in the dwelling and residential environment cannot be included in one of the previous categories. Here we shall discuss the activities working at home, commuting, eating and sleeping separately.

Type of residential environment and level of education are significant predictors for working at home. City centre dwellers are more likely to have mentioned working at home than people who live in a suburban type or rural of residential environment. People with a high level of education (higher vocational or university) are more likely to have mentioned working at home compared to people with a low level of education. A possible explanation might be that knowledge workers (generally people with a high level of education) can more easily work at home than people who do production work (generally people with a low level of education).

For the activity commuting, both age and size of the living room are significant predictors. People who live in or prefer to live in a dwelling with a living room of over 45 square metres are less likely to have mentioned commuting than people with a living room of less than 34 square metres. There does not seem to be an obvious explanation for the relation between commuting and the size of the living room. As for the predictor age, people over 55 are two times less likely to have mentioned commuting. This would seem evident because a considerable share of people in the age category over 55 would be retired and not have a job to commute to any more.

The significant predictor for the activity eating is household composition. People who live in a three- or more person household are more likely to have mentioned eating, compared to people living in a one- or two-person household. This might indicate that eating can be considered a family-related activ-

ity. The meaning structures that we will discuss in the next chapter might help interpret the relation between the activity eating and household composition.

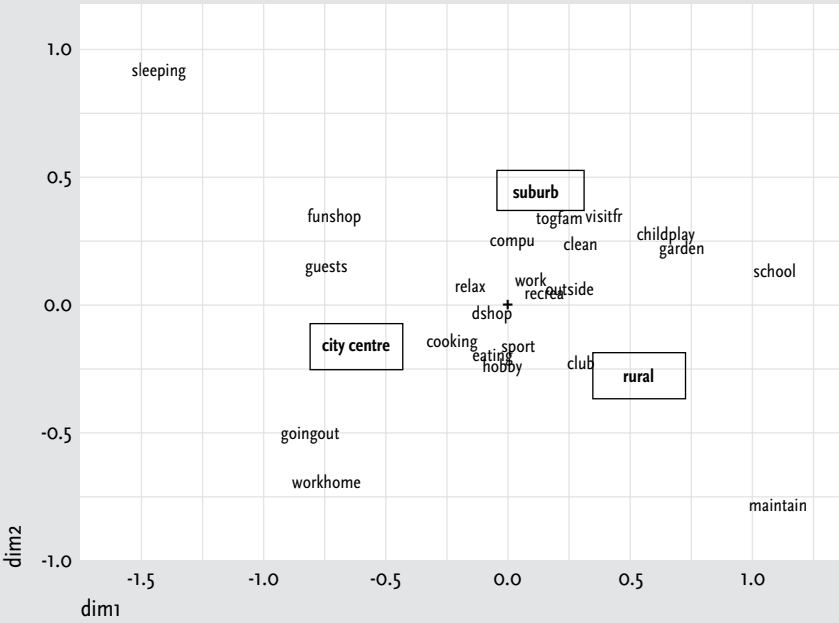
The last activity is sleeping. People over 55 are less likely to have mentioned the activity sleeping than people aged 18-39. One explanation might be that younger people have more obligations during the day, for example study, work or family care, than people over 55. A good night's rest might be more important to young people than to people who are already retired. Also level of education came up as a significant predictor. People with a university degree are more likely to have mentioned sleeping than people with a low level of education.

4.4 Association between activities and type of residential environment, age and household composition

The logistic regression models show that for each individual activity there is always at least one significant predictor. Especially age, type of residential environment and household composition frequently turn out to be significant predictors for single activities. Logistic regression analysis can only look at the effect of multiple predictors on one activity. However, it might be possible that single predictors are related to a group of activities. Complementary to the logistic regression analysis, we try to find out to what extent these single predictors are associated with all of the activities mentioned. This can be done by means of correspondence analysis, which involves making a cross-classification of the relevant predictor with the activities. The solutions of the correspondence analysis can be interpreted in the same way as those of the multiple correspondence analyses. The centroid indicates the average profile. Activities that lie close to one another have similar profiles, activities that lie far away from each other have a different profile. The results from the correspondence analyses in this section indicate the similarities and differences among different groups of respondents (type of residential environment, age and household composition), with respect to the activities they perform in the dwelling and residential environment. These analyses provide insight into what extent different groups of respondents have different activity patterns. Besides, these data can be used to interpret the outcomes of the logistic regression.

The correspondence analysis solution in Figure 4.1 indicates the similarities and differences in activities among people living in a city centre, suburban and rural type of residential environment. The first dimension explains 87 per cent of the proportion of inertia, the second dimension 13 per cent (chi-square=311.682, df=56, $p<0.001$). Because dimension one explains over 80 per

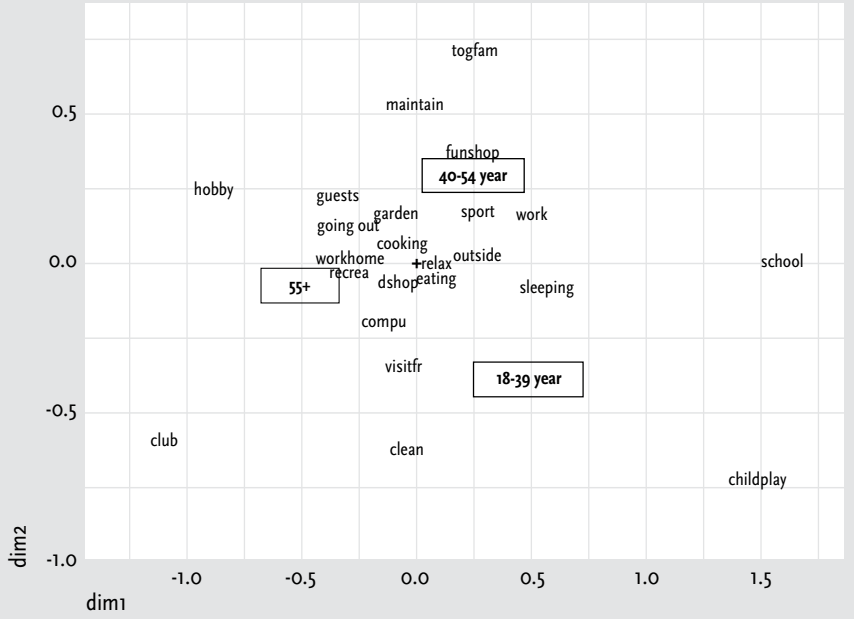
Figure 4.1 Correspondence analysis solution for all activities and type of residential environment on dimension one and two



cent of the inertia, we focus on interpreting dimension one. It separates city centre dwellers on the left side of dimension one from people living in suburban and rural types of residential environments on the right side; in other words, they differ most in respect to activities. The + indicates the centroid of the solution (0,0). Family-related activities like being together with the nuclear family, children playing and bringing children to school are situated on the right side of dimension one and lie closest to both rural and suburban types of residential environments. Respondents who live in either a rural or suburban type of residential environment mentioned these activities more often compared to city centre dwellers. Also the activities gardening and maintenance of the dwelling are positioned on the right side of dimension one. Fun shopping, entertaining guests, going out and working at home are mentioned more often by respondents who live in a city centre. Sleeping occupies a rather isolated position in the solution; it does not seem to be associated with a certain type of residential environment or activity. All other activities are situated more or less in the middle of the chart. These activities were mentioned just as often by city centre dwellers as by respondents who live in either a rural or suburban area.

Figure 4.2 indicates the similarities and differences in activities among three different age groups; people aged 18-39, 40-54 and over 55. The first dimension explains 89 per cent of the proportion of inertia, the second dimension 11 per cent (chi-square=198.233, df=56, p<0.001). Again, we focus on interpreting dimension one. It separates people aged over 55 on the left side of dimension one, from people aged 18-39 and 40-54 on the right side. Leisure activities like going to a club and hobby are associated with people aged over 55. Fam-

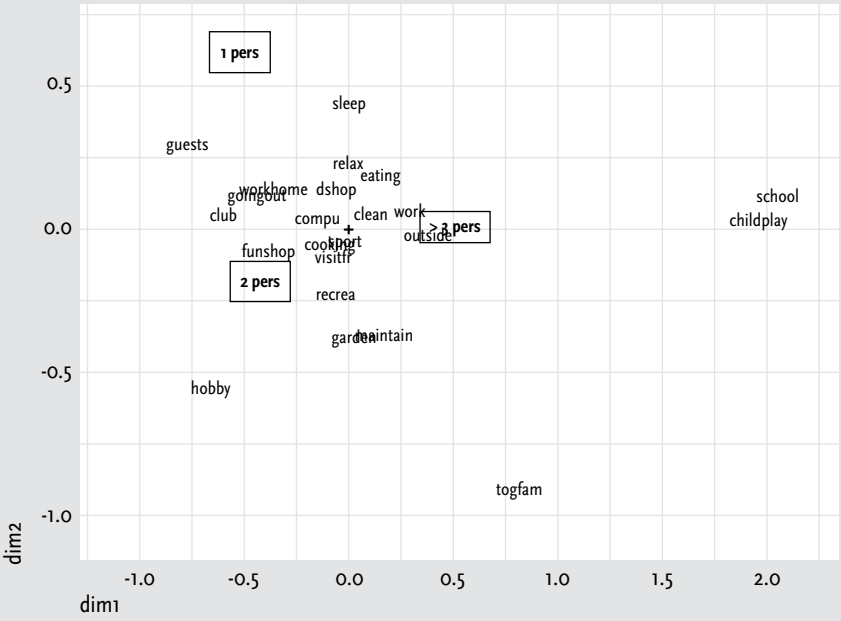
Figure 4.2 Correspondence analysis solution for all activities and age on dimension one and two



ily-related activities like bringing the children to school and children playing are associated with people aged 18-54. All other activities do not differentiate much between the three age groups; they lie close to the centroid and in between the three age groups. Univariately, age is a significant predictor for the activities going to a club and hobby, indicating the same relation. People aged 18-54 are associated with bringing children to school and children playing. Also for these activities the logistic regression models showed this relation. But, considering all activities together, the differences between the age groups are relatively small. This becomes visible in the small scales of both dimensions and the fact that most activities lie in between the three age groups close to the centroid.

Finally, the correspondence analysis solution in Figure 4.3 indicates the similarities and differences in activities among three different household groups (one-, two- and three- or more person households). The first dimension explains 94 per cent of the proportion of inertia, the second dimension 6 per cent (chi-square=264.277, df=56, p<0.001). Again, we focus on interpreting dimension one. It separates one- and two- person households on the left side of dimension one, from three- or more person households on the right side. The activities entertaining guests and hobby are most associated with one- and two-person households, whereas the activities being together with the family, bringing children to school and children playing are associated with people living in a three- or more person household. As for age and type of residential environment, household composition also shows relatively little differentiation in activities. Still, the correspondence analysis shows a clear difference in the activities children playing, bringing the children to school and

Figure 4.3 Correspondence analysis solution for all activities and household composition on dimension one and two



being together with the family. All three activities are family-related, and people living in a household with three or more persons mentioned these activities more often than people who live in a one- or two-person household. And children playing and bringing children to school together form a cluster. For all the other activities it is very difficult to distinguish differences in activities between one-, two- and three- or more person households.

4.5 Conclusion

The first research question concerns which activities are important for respondents in their dwelling and residential environment. The results show that respondents perform a wide variety of activities. These include social activities, like entertaining guests and visiting friends, and leisure activities, like watching TV and cycling. But activities related to housekeeping are also important in people's everyday life. Cooking, cleaning and doing daily errands were mentioned by more than one-third of all respondents. The various everyday activities in the dwelling and residential environment cover different domains like leisure, work and home life. The second research question asks to what extent activity patterns exist. The multiple correspondence analyses show three groups of activities. Family-related activities (bringing children to school and children playing) clearly differentiate from all other activities. So families with children perform different activities than the other respondents in the research population. Life course in general and family career in particular have an effect on people's everyday activities. The multiple correspond-

ence analyses also differentiate household chores and leisure activities. These three groups of activities resemble to a large extent what is referred to in the literature as the family domain, labour domain and leisure domain (Van Diepen and Arnoldus, 2003). The labour domain is not clearly present in this data set; instead what one might call domestic labour is present (e.g. doing daily errands, cleaning). These domains all contribute (both in activities and meanings) to the way in which a person lives his life. Finally, we explored if and to what extent household characteristics, dwelling features and type of residential environment have an impact on performing activities. The logistic regression models of activities in the dwelling and residential environment show that household characteristics, type of residential environment and dwelling features determine to some extent which activities are performed. Especially age (in 12 out of 23 models), type of residential environment (in 9 out of 23 models) and household composition (in 8 out of 23 models) turn out to be statistically significant predictors of performing activities. (See Appendix 7 for a complete overview of significant predictors per activity.) Except for the activities gardening, children playing and bringing children to school, the Nagelkerke R^2 is low. This indicates that the predictor variables do not contribute greatly to the estimation of the dependent variable (activities). It might be that other factors, for example meanings, also have an effect on the activities. This will be tested in the next chapter. The correspondence analysis also shows that certain activities are associated with certain types of residential environment. For example the activities going out and entertaining guests are associated with a city centre type of residential environment. The activities children playing and gardening are associated with both suburban and rural types of residential environment.

It is believed that life in the city centre is different from that in a suburban or rural type of residential environment (Reijndorp *et al*., 1998; Reijndorp, 2004; Heins, 2002; De Wijs-Mulkens, 1999). The results presented in this chapter only partly substantiate this statement. It seems that many activities that are performed in either the dwelling or in the residential environment are not influenced by the type of residential environment. For example, regardless of where a person lives, that person needs to eat, sleep, go to work and do daily errands. However, two groups of activities do differentiate for type of residential environment. First, leisure activities like going out, going to a club or fun shopping differ significantly depending upon the type of residential environment. City centre dwellers mentioned going out and fun shopping more often than people who live in suburban or rural types of residential environment. This result seems self-evident, since we know that city centres offer many opportunities for going out and fun shopping. Other research also finds this relation (Lindberg *et al*., 1987; Reijndorp, 2004). People may choose to live in urban environments because of the presence of many facilities. People living in rural types of residential environment more often mentioned going to

a club compared to city centre dwellers. A possible explanation might be that people living in rural areas are more community-oriented and express this by joining a local club. Second, the activities that differentiate most are family-related. Young people and people who live in a three- or more person household mentioned more often the activities of bringing children to school, children playing and being together with the nuclear family, compared to people who live in a one- or two-person household and people aged over 55. Not surprisingly, people without (young) children will hardly ever mention child-related activities, whereas people who have children find such activities important. Bringing children to school, children playing and being together with the nuclear family are activities typically related to the family career. Univariately, age and household composition are the significant predictors for family-related activities, whereas type of residential environment is not significant. However, taking all activities into account, family-related activities are most strongly associated with a suburban or rural type of residential environment (see Figure 4.1).

Before concluding this chapter, some remarks should be made about the typology of residential environment used in this study. The Netherlands is a country with a high building density. It is almost impossible to drive for half an hour without passing at least two villages or towns. So, in the Netherlands and particularly the Randstad, distances between urban and rural areas are rather small. This also applies to distances within urban areas. Cities are built in a compact manner. Suburbs, lying on the rim of the cities, are therefore not that far away from the city centres. Still, it is useful to make a distinction between the three types of residential environment. Even though the distance between the three types of residential environment is relatively small, they do differ in their features. In city centres more people live in multi-family dwellings with on average fewer rooms. Many facilities like restaurants, bars and cinemas are within walking distance. In suburban and rural types of residential environment most people live in a single-family dwelling, having a garden and more rooms available. Most of the time, facilities like shops, bars and cinemas are not within walking distance of the dwelling. To some extent, these different features lead to different activities. The analyses show, for example, that city centre dwellers are more likely to go out than people living in a suburban or rural area. People who live in a suburban or rural type of residential environment are more likely to have mentioned gardening, for example, than city centre dwellers.

Concluding, the type of residential environment does influence to some extent the everyday activities people perform. There is a relation between type of residential environment and leisure activities. Furthermore, there is an indirect relation between type of residential environment and family activities. Still, everyday life in city centre, suburban and rural types of residential environment seems to be more similar than one would expect in light of the

literature. Many activities like going to work, eating, cleaning and doing daily errands need to be done, regardless of where one lives. These activities make up a large part of people's everyday life and therefore cannot be ignored. Furthermore, we agree with Metaal (2005) and McDonogh (2006) that the description of life in city centre, suburban and rural types of residential environment is sometimes rather one-sided and stereotyped. The results presented in this chapter show that the activities people perform, regardless of the type of residential environment they live in, are wide-ranging and that they cannot easily be reduced to compact and surveyable patterns. Until now we have only focussed on the way in which people use their dwelling and residential environment. Values like an exciting life (associated with city life) or finding peace and quiet (associated with rural living) are also important arguments found in the literature, where they are said to contribute to the importance of and differentiation among types of residential environment. Before we can determine to what extent life is different in each of the three types of residential environment, we would need to take a closer look at which meanings people attach to their everyday activities.

5 The meaning of activities in the dwelling and residential environment

This chapter looks in detail at the meanings respondents have attributed to their activities in the dwelling and residential environment. So, which meanings are important for which activities? Activities are performed in different sub-settings of the dwelling and residential environment. For example, eating can take place in the kitchen, but also in the living room. Each sub-setting has its own set of activities, which gives insight into the functionality of that setting. That is only one part of the relation between people and environments; the meaning people attach to the activities need to be taken into account as well. Therefore, the activities are here connected not only to the sub-settings where they take place but also to the meanings that respondents attach to the activities. This approach is closely related to that of the means-end chain, which connects attributes to their underlying values (Reynolds and Gutman, 1988; Pieters *et al.*, 1995). The relation between sub-setting, activity and meaning is represented in meaning structures. To investigate these relations, the research questions addressed in this chapter are the following:

4. To what extent do general meanings influence activities, also controlling for socio-demographic variables, dwelling and residential environment features?
5. To what extent do different orientations of general meanings exist for different groups of people subdivided by type of residential environment, age and household composition?
6. What are the most mentioned meanings for activities in the dwelling?
7. What are the most mentioned meanings for activities in the residential environment?

This chapter is organised as follows. Section one discusses which meanings are important for each activity. It presents logistic regression models in which general meanings are added as predictors for activities. It asks to what extent general meanings influence activities, controlling for socio-demographic variables and features of the dwelling and type of residential environment. The second section focuses on general meanings, considering the extent to which different orientations of general meanings exist. The third section explains the way in which the meaning structures are represented and analysed. The fourth section presents the meaning structures for activities performed in the dwelling, distinguishing four sub-settings: the living room, kitchen, study and private outdoor space. The fifth section does the same, but then for activities in the residential environment. Because an activity in itself may already imply information about the place where it is performed (for example, playing tennis implies going to the tennis club), in such cases proximity to the dwelling is taken as an attribute. After attempting to synthesise all of the findings, in the final section we draw some conclusions about the most frequently mentioned meanings of activities in the dwelling and residential environment.

5.1 The effect of meaning on activities in the dwelling and residential environment

One of the basic assumptions of the conceptual framework is that behaviour is value-oriented and goal-directed. Therefore we want to inquire about the extent to which activities and meanings are related. Using logistic regression analyses we examine to what extent meanings affect activities, taking socio-demographic variables as well as dwelling and residential environment features into account. The logistic regression models are the same as those described in the previous chapter, but now we add general meanings as independent variables to activities. Looking at the Nagelkerke R^2 we can also see to what extent the models improve by including general meanings, compared to the models without general meanings. Each respondent was asked why a certain activity was important to him (m1) and then asked why that meaning was important to him (m2). Using field-coding we have categorised all answers. To investigate general tendencies in activity-meaning relations, we defined general meanings. In other words, by using general meanings we can look for patterns in activity-meaning relations for all respondents. A general meaning is defined by (1) the meaning is an answer-category for at least three activities; and (2) the sum of meanings (m1 and m2) is at least 80. This cut-off level has been chosen to leave sufficient cases in each cell for analysis. In short, a general meaning is a meaning that has been assigned to several activities. Appendix 8 gives an overview of all general meanings.

Exactly the same procedure as in Chapter four is used for the logistic regression models. Therefore it will suffice to describe the effect of adding general meanings to the models. All results of the logistic regression models are summarised in Appendix 9.

5.1.1 The effect of meaning on family-life activities

The activities that concern family life are taking the children to school, children playing and being together with the nuclear family. As one would expect, age and household composition are important predictors for these activities. *Personal development of the child* is the meaning mentioned most often for the activity children playing. This meaning is unique to this activity; it has not been mentioned for any other activity. Because of this direct link, this meaning cannot be included in the logistic regression models. Only the general meaning *peace and quiet* could be added to the model for children playing. Peace and quiet is not a significant predictor for this activity. This implies that adding the general meaning peace and quiet does not improve the model with respect to the socio-demographic variables that were already identified as significant predictors for children playing. The meaning structures in Section 5.4 will show which (unique) meanings are important for the activity

Table 5.1 The effect of meaning on family-life activities

Activity	General meaning
Taking the children to school	Safety
Children playing	-
Being together with the nuclear family	Sharing things together

children playing. For taking the children to school, besides age and household composition, the general meaning safety is a significant predictor. It is actually a very important factor, as indicated by the high odds ratio (33). Adding the general meanings to the model almost doubles the Nagelkerke R^2; the model including the general meaning safety contributes 64 per cent when estimating the activity taking the children to school. For being together with the nuclear family, alongside household composition, the general meaning *sharing things together* is a significant predictor (odds ratio 3).

Summarising, for family-related activities, adding general meanings to the logistic regression models only partly changes the outcome; age and household composition remain significant predictors. However, general meanings do add extra information (see Table 5.1). Having a safe route to travel to school is very important for taking the children to school. And being together with the nuclear family makes it possible for people to share their experiences of the day with their family members.

5.1.2 The effect of meaning on household chores

Activities that concern household chores are cooking, cleaning, maintenance of the dwelling, gardening and daily errands. Besides type of residential environment, *space* is a significant predictor for the activity cooking: people who have mentioned space are much more likely to have mentioned cooking (odds ratio 36), compared to respondents who have not mentioned space. The confidence interval is large. Even though space was also an answering category for the activities eating and working at home, space was mainly mentioned for the activity cooking. This also becomes clear in the meaning structure of the kitchen, which will be discussed in section 5.4.2. Furthermore, *convenience* is a significant predictor for cooking (odds ratio 3). The activity cleaning has multiple significant predictors: age, household composition, level of education, size of the living room, tenure and the general meaning *pleasure*. Household composition did not show up as a significant predictor in the previous chapter. People living in a three- or more person household are two times more likely to have mentioned cleaning compared to people living in a one- or two-person household. One might assume that with more people living in a dwelling, it will also get dirty more easily, so it will need more cleaning. Also pleasure is a significant predictor. Cleaning makes people feel good; they enjoy living in a clean house. The activity gardening has many significant predictors: type of residential environment, household composition, dwelling type, garden and neighbourhood already showed up as significant predictors in Chapter four. By adding general meanings, two additional significant predictors come up: *keeping busy* and *necessity*. Keeping busy is very important for the ac-

Table 5.2 The effect of meaning on household chores

Activity	General meaning
Cooking	Space, convenience
Cleaning	-
Maintenance of the dwelling	Keeping busy
Gardening	Keeping busy, necessity
Daily errands	Saving time

tivity gardening (odds ratio 37), but the confidence interval is large. Besides keeping busy, also necessity is a significant predictor for the activity gardening (odds ratio 4). Most people enjoy gardening, but having a garden involves the responsibility of maintaining it. So this significant relation indicates that gardening is seen as a chore by a considerable group of people. Adding general meanings to the model of gardening almost doubles the Nagelkerke R^2; the model including general meanings contributes 45 per cent when estimating gardening. For the activity maintenance of the dwelling, besides gardening, *keeping busy* (odds ratio 4) comes up as a significant predictor. So, we can say that people who like to keep busy are more likely to perform the activities gardening and maintenance of the dwelling. The last household chore is daily errands; *saving time* is the only significant predictor for this activity (odds ratio 2). People feel it is important to have shops close by so they can spend less time doing their errands.

Summarising, functional aspects seem to be important with regard to household chores. People need sufficient space to cook; for their daily errands they want to have shops close by to save time; and gardening is experienced as a necessary job. Still, household chores also afford pleasure; cleaning can be pleasurable and gardening is a nice way of keeping busy.

5.1.3 The effect of meaning on leisure activities

Many activities mentioned for either the dwelling or residential environment are leisure activities. These are hobby, being outside, relaxing, entertaining guests, being at the computer, going out, recreation, going to a club, visiting friends, doing sports and fun shopping. Because there are so many leisure activities, the activities are combined here in groups. The first one consists of activities aimed at meeting others, classified as social leisure activities: entertaining guests, visiting friends and going out. The second group consists of passive leisure activities: relaxing and being outside. The third consists of active leisure activities: hobby, going to a club, doings sports and recreation. The final group consists of 'other' leisure activities: being at the computer and fun shopping.

Social leisure activities

For the activity going out, adding general meanings changes the set of predictors somewhat. Without general meanings, four predictors are significant: type of residential environment, age, income and dwelling type. Adding general meanings, both type of residential environment and income remain significant (with similar odds ratios), but the general meanings *getting away from*

Table 5.3 The effect of meaning on social leisure activities

Activity	General meaning
Going out	Getting away from things, enjoyable, social contacts, personal development
Entertaining guests	Sharing things together, enjoyable, social contacts
Visiting friends	Sharing things together, social contacts, enjoyable

things, enjoyable, social contacts, personal development and pleasure are also significant. People feel that through the activity going out they can forget about their day-to-day worries. This is an important function of going out (odds ratio 9), while it is also a way to meet friends (odds ratio 2) and enjoy their company (odds ratio 2), and people feel that going out contributes to their personal development (odds ratio 2). It is noteworthy that the relation between pleasure and going out is negative; people who mentioned pleasure are two times less likely to have mentioned the activity going out. A possible explanation might be that pleasure is more important for other activities and was mentioned only a few times by respondents who mentioned going out. The meaning structure of activities in the residential environment should give more insight into this relation (Section 5.5). Adding general meanings to the model of the activity going out almost doubles the Nagelkerke R^2; the new model contributes 37 per cent when estimating going out. For the activity entertaining guests, besides type of residential environment, household composition and tenure, also the general meanings *sharing things together, enjoyable* and *social contacts* are significant. By inviting friends over to the house, people can meet with their friends and catch up (odds ratio 2). It is a way to share important experiences with their friends (odds ratio 5) and enjoy the good company of friends (odds ratio 4). Adding general meanings to the model increases the Nagelkerke R^2 quite substantially; the new model contributes 31 per cent when estimating the activity entertaining guests. Not surprisingly, the activity visiting friends has a similar set of significant general meanings. Besides type of residential environment, also *sharing things together, enjoyable and social contacts* are significant. Visiting friends is a way to meet friends (odds ratio 6), share important experiences (odds ratio 11) and enjoy the good company of friends (odds ratio 4). The model including general meanings for visiting friends improves even more compared to entertaining guests. The model including general meanings contributes 47 per cent when estimating the activity visiting friends.

Summarising, the analyses show that general meanings like social contacts, enjoyable and sharing things together are important meanings for social leisure activities. The activity going out has also a dimension that shows that by going out people feel they can forget about day-to-day worries and learn new things. Adding general meanings to the models for the activities going out, entertaining guests and visiting friends improved the models substantially (see Table 5.3).

Passive leisure activities

Adding general meanings to the logistic regression model for the activity relaxing changes the set of significant predictors slightly. Without general meanings, type of residential environment and age are significant predic-

Table 5.4 The effect of meaning on passive leisure activities

Activity	General meaning
Relaxing	Break from work, relaxation, peace and quiet
Being outside	Nature, pleasure, enjoyable

tors. Adding general meanings, type of residential environment (same odds ratio) and garden are significant. People who have or prefer to have a garden are two times less likely to have mentioned relaxing, compared to people who do not have or prefer to have a garden. Besides these two predictors, the general meanings *break from work, relaxation* and *peace and quiet* are also significant predictors. Relaxing (mainly reading and watching TV) makes people feel that they can forget about their work (odds ratio 3), relax (odds ratio 2) and to come to rest (odds ratio 2). Also for the activity being outside, adding general meanings to the model results in somewhat different outcomes. Without general meanings only the predictor garden was significant. Including general meanings, also household composition and dwelling type are significant. People who live in a three- or more person household are two times more likely to have mentioned being outside compared to people living in a one- or two-person household. And people who live in a multi-family dwelling are twice as likely to have mentioned being outside compared to people who live in single-family dwelling. Finally, also the general meanings *nature*, *pleasure* and *enjoyable* are significant predictors. Being outside in the garden or on the balcony affords people the pleasure of being out of doors (odds ratio 3) and to experience nature (odds ratio 3). Many people use the private outdoor space to entertain guests; demonstrating that the garden or balcony is a place to enjoy the company of friends (odds ratio 2) (see Table 5.4).

Active leisure activities

Besides the socio-demographic variables age, household composition and level of education, none of the general meanings are significant predictors for the activity hobby. This means that adding the general meanings peace and quiet, personal development, relaxation and keeping busy does not improve the model for the activity hobby. Probably other, unique meanings are important for the activity hobby. For the activity going to a club, the general meanings *social contacts* and *personal development* are significant predictors (besides type of residential environment, age and garden). At the club, one can meet other people (odds ratio 3) and learn new things (odds ratio 2). For the activity doing sports the significant predictors change by adding general meanings. In the model without general meanings, age is significant (level of education and neighbourhood are only significant at the overall level). In the model with general meanings, age, household composition, level of education and garden are significant. People living in a three- or more person household are two times less likely to have mentioned doing sports than people living in a one- or two-person household. People with an intermediate level of education are three times less likely to have mentioned doing sports, compared to people with a low level of education. People who have no garden or prefer to have no garden are two times less likely to have mentioned doing sports, compared

Table 5.5 The effect of meaning on active leisure activities

Activity	General meaning
Hobby	-
Going to a club	Social contacts, personal development
Doing sports	Health, getting away from things, social contacts
Recreation	Nature

to people who have a garden or prefer to have a garden. There is a significant interaction effect for household composition and garden. People who live in a one- or two-person household and who have a garden are more likely to have mentioned doing sports than people who live in a three- or more person household and who have no garden or are neutral about having a garden or balcony. The combination of household composition and garden seems to strengthen the negative effect each individual predictor already has. Besides these predictors, also the general meanings *health, getting away from things* and *social contacts* are significant for the activity doing sports. Health is an important motivation for doing sports; the odds ratio (28) and confidence interval are large. Beside health, people feel that doing sports can make them forget about daily worries (odds ratio 2). Respondents also see sports as a social activity, a way to meet other people (odds ratio 2). Adding general meanings substantially improves the model for doing sports. The model including the general meanings contributes 53 per cent when estimating the activity doing sports. For the activity recreation, besides age and income, the general meaning nature is significant too. Recreation is a way for people to get in touch with nature (odds ratio 5). Even though both sports and recreation are activities to keep your body fit, the emphasis on being fit (staying healthy) seems to be more present in the meanings attributed to doing sports. For recreation the emphasis lies more on enjoying nature (see Table 5.5).

Other leisure activities

For the activity being at the computer besides dwelling type, also the general meanings *personal development, social contacts* and *relaxation* are significant predictors. Using the computer (and internet) gives people access to information so that they can learn new things (odds ratio 4). Being at the computer is also a way to stay in contact with family and friends (odds ratio 2) and it is a way to relax (odds ratio 2). There is a significant interaction effect for being at the computer: people who live in a multi-family dwelling and who mentioned personal development are three times less likely to have mentioned being at the computer, compared to people who live in a single-family dwelling and who did not mention personal development. Both individual predictors have a positive relation with being at the computer. In combination, they have a negative relation on this activity. For fun shopping, besides age, household composition and type of residential environment, the general meaning *necessity* is significant (odds ratio 8). Fun shopping is about buying new durable consumer goods, which people experience as a necessity. In this regard, it might be similar to gardening. Gardening can be fun for some people, but having a garden also entails an obligation to maintain it. For fun shopping, people need

Table 5.6 The effect of meaning on other leisure activities

Activity	General meaning
Being at the computer	Personal development, social contacts, relaxation
Fun shopping	Necessity

to get out sometimes to buy, for example, new clothes or a new couch. Some people enjoy that, others see it as a necessary evil, something that just needs to be done (see Table 5.6).

5.1.4 The effect of meaning on other activities

For the activity commuting besides surface of the living room, also the general meanings *saving time, safety* and *peace and quiet* are significant. Going to work is something that most people do on a daily basis; therefore one might expect that functional aspects like saving time (odds ratio 7) and having a safe road to travel (odds ratio 2) are important. If these two conditions are fulfilled in a satisfactory manner, people feel that they can rest up (odds ratio 2). There is a significant interaction effect for the meanings saving time and safety. People who mentioned both saving time and safety are three times less likely to have mentioned commuting. Few people (n=31) have mentioned both general meanings to be important for commuting. That might explain the negative relation of both predictors on commuting. None of the general meanings entered in the logistic regression model for the activity working at home is significant. That means that peace and quiet, space, personal development and necessity do not contribute to estimating the activity working at home, besides type of residential environment and level of education. Some other, unique meanings are probably more important for the activity working at home (discussed in Section 5.4). Finally, for the activity eating, household composition and the general meaning *peace and quiet* are significant predictors. People who live in a three- or more person household are more likely to have mentioned eating. Also people who have mentioned peace and quiet are more likely to have mentioned the activity eating. This can be interpreted that dinner time is the time of the day that the family sits quietly together (see Table 5.7).

Concluding, the analyses in this section have shown that adding general meanings to the logistic regression models provides extra information, besides the socio-demographic variables, dwelling features and residential environment features. For example, as we have seen in Chapter four, type of residential environment is a significant predictor for the activity cooking. In this chapter we have added general meanings to the model. Besides type of residential environment, also space came up as a significant predictor for the activity cooking, leaving the odds ratio of the predictor type of residential environment more or less the same. This example can be applied to most models presented in this section. For all models (except working at home, hobby and children playing) the Nagelkerke R^2 increased, indicating that by adding general meanings to the models, the predictors contribute more to the estimation of activities. Especially the models of the activities entertaining guests, visiting friends, going out, gardening, doing sports and taking the

Table 5.7 The effect of meaning on other activities

Activity	General meaning
Commuting	Saving time, safety, peace and quiet
Work at home	-
Eating	Peace and quiet

children to school improved substantially because of the addition of general meanings. Therefore we can conclude that the general meanings add new, relevant information to the models.

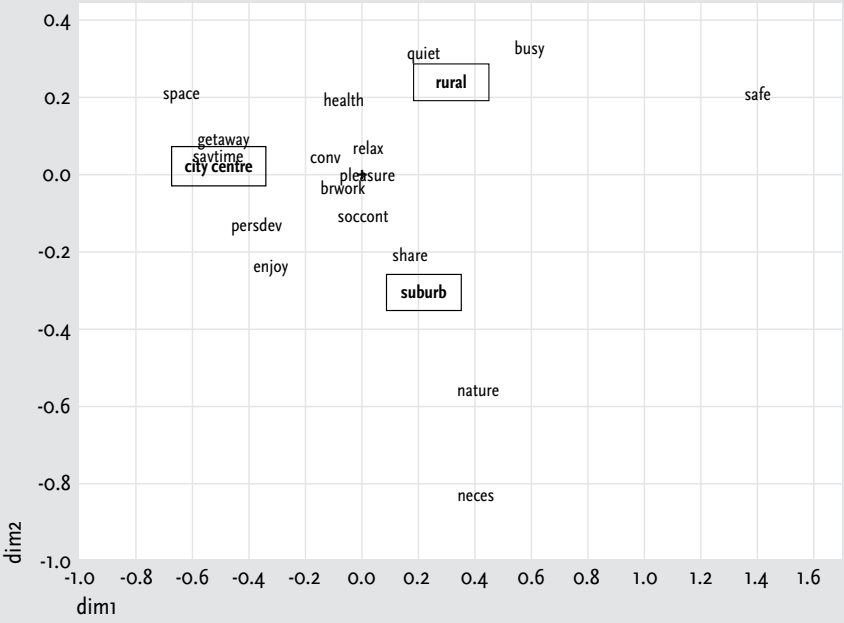
In Chapter four we applied correspondence analysis to ascertain the extent to which all activities in the dwelling and residential environment are associated with type of residential environment, age and household composition. The logistic regression models presented in this chapter give some insight into the relation between general meanings as predictors for activities. Furthermore, we also consider the extent to which all general meanings are related to these background variables. In the next section we again use, as in Chapter four, the background variables type of residential environment, age and household composition.

5.2 Orientations of general meanings for activities in the dwelling and residential environment

This section briefly presents some additional analyses, which focus on general meanings. We use correspondence analysis to look at the association between single predictors (age, household composition and type of residential environment) and all general meanings together. Correspondence analysis takes all general meanings into account and therefore can give more insight into which general meanings are associated with, for example, a city centre type of residential environment. In other words, do city centre dwellers have different orientations of general meanings than people living in a rural type of residential environment?

The correspondence analysis solution in Figure 5.1 indicates the similarities and differences in general meanings among people living in a city centre, suburban and rural type of residential environment. The first dimension explains 87 per cent of the proportion of inertia, the second dimension 13 per cent (chi-square=68.739, df=32, p=0.000). Because dimension one explains over 80 per cent of the inertia, we focus on interpreting dimension one. It separates city centre dwellers on the left side of dimension one from people living in suburban and rural types of residential environments on the right side. In other words, they differ most in respect to general meanings. *Space, getting away from things* and *saving time* lie close to the city centre; these general meanings are most strongly associated with a city centre type of residential environment. The general meaning *safety* lies on the far right side of dimension one, being most associated with a rural and suburban type of residential environment. The general meanings *nature* and *necessity* lie closest to a subur-

Figure 5.1 Correspondence analysis solution for general meanings and type of residential environment on dimension one and two

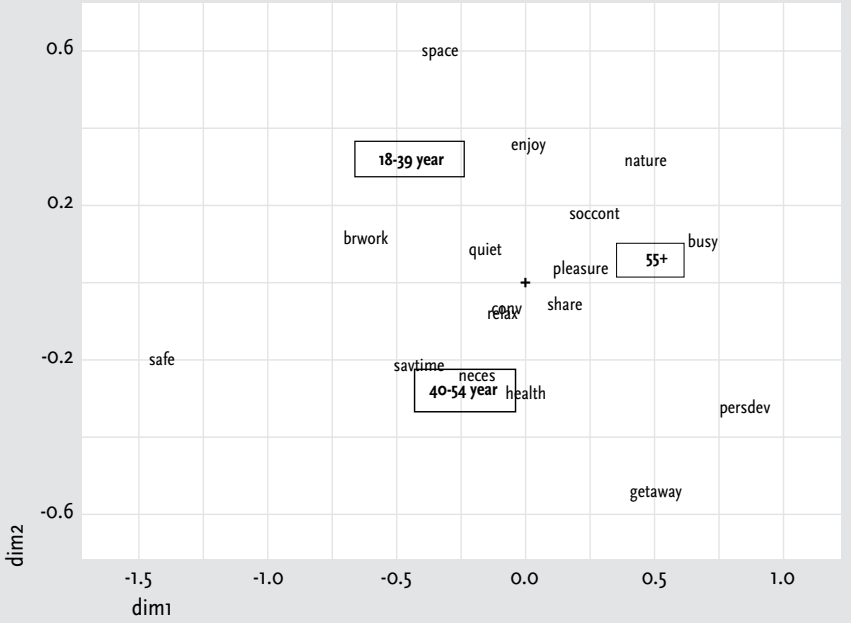


ban type of residential environment. *Keeping busy* and *peace and quiet* lie close to a rural type of residential environment. The meanings *pleasure* and *break from work* lie at the centre of the solution; these meanings were mentioned equally often by all respondents, regardless where they live.

Figure 5.2 shows the similarities and differences in general meanings among three different age groups (people aged 18-39, 40-54 and 55+). The first dimension of the correspondence analysis solution explains 90 per cent of the proportion of inertia, the second dimension 10 per cent (chi-square=96.887, df=32, *p*=0.000). Dimension one separates people aged 18-39 and 40-54 on the left side from people aged over 55 on the right side. All general meanings lie rather close to each other and close to the centroid, the average profile. So, for age, most general meanings do not differentiate much. The general meanings *convenience, relaxation, sharing things together, pleasure* and *peace and quiet* lie close to the centroid. Thus, these general meanings are important for all respondents, regardless of their age. Still, there are some differences. The general meaning *safety* lies on the far left side of dimension one; it is associated with people aged 18-54. This does not imply that people aged over 55 do not find safety important. The general meaning safety is closely related to the activity taking the children to school. That explains why this general meaning is so strongly associated with people aged 18-54. Space lies closest to people aged 18-39. The general meanings *saving time*, *necessity* and *health* lie very close to people aged 40-54 years. Keeping busy lies closest to people aged over 55. The general meanings *personal development* and *getting away from things* lie on the right side of dimension one and seem to be most associated with people over 55.

Finally, Figure 5.3 indicates the similarities and differences among one-, two-

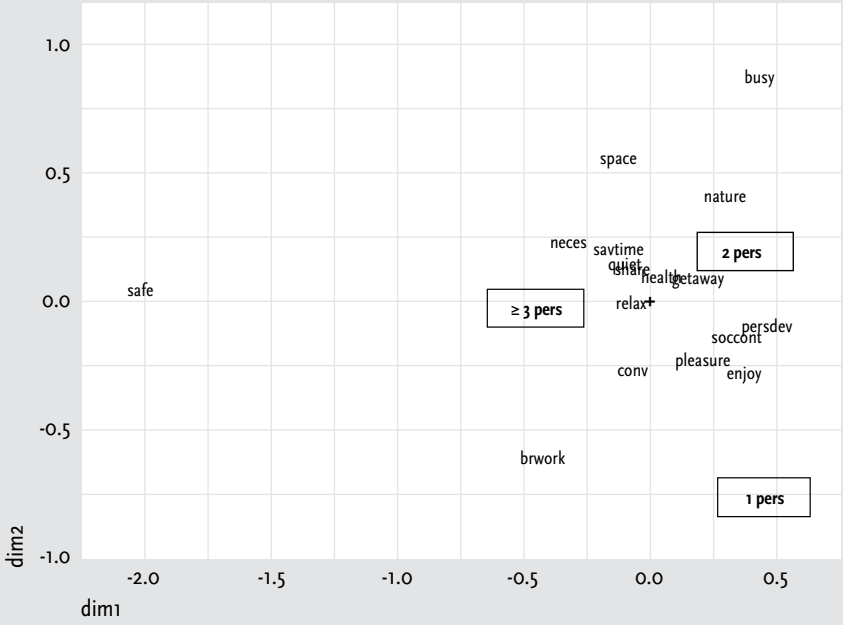
Figure 5.2 Correspondence analysis solution for general meanings and age on dimension one and two



and three- or more person households with respect to general meanings. The first dimensions of the correspondence analysis solution explains 84 per cent of the proportion of inertia, the second dimension 16 per cent (chi-square=128.265, df=32, *p*=0.000). Dimension one separates three- or more person households on the left side from one- and two-person households on the right side. The general meaning *safety* lies far from all other points and is associated with people living in a three- or more person household. As the logistic regression analyses have already shown, especially people with young children mentioned safety (strongly related to the activity taking the children to school). Also the general meanings *break from work* and (to a lesser extent) *necessity* are associated with three- or more person households. *Keeping busy* and *nature* are most associated with two-person households. No particular general meaning seems to be associated with one-person households. The general meanings *relaxation, health* and *getting away from things* lie close to the centroid, the average profile of the solution. So for all people, regardless of the kind of household they live in, these meanings are important.

Section 5.1 showed that general meanings significantly affect activities. The correspondence analysis showed that age, household composition and type of residential environment are to some extent associated with general meanings. Still, we should bear in mind that unique but important meanings for activities (for example, personal development of the child for the activity children playing) are not included in either the logistic regression models or the correspondence analyses. The analyses presented in the previous sections only showed the relation between activities and general meanings. That means that these analyses do not give a complete overview of the important

Figure 5.3 Correspondence analysis solution for general meanings and household composition on dimension one and two

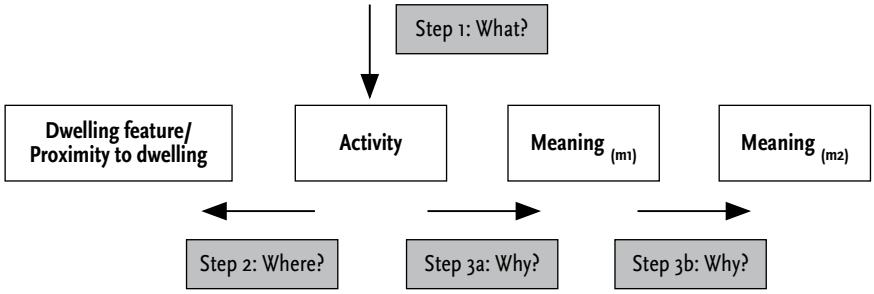


meanings and activities. Sections 5.4 and 5.5 discuss the meaning structures of activities in the dwelling and residential environment. In these meaning structures, both activity-specific meanings (for example personal development of the child) and general meanings (for example relaxation or pleasure) will be discussed in detail. The next section (5.3) will first explain how the meaning structures are built up.

5.3 Representing and analysing meaning structures

After focussing on the relation between activities and general meanings, we now look at the complete meaning structure. The complete meaning structure is built in three steps: (1) what people do; (2) where they perform the activity; and (3) why the activity is important to them. Figure 5.4 summarises the way in which meaning structures are created. This section explains in what way meaning structures can be represented and analysed. A meaning structure comprises a set of meanings that are relevant to a given behaviour (activities in the dwelling and residential environment) or attribute (dwelling feature). For activities in the dwelling, respondents were asked in which room of the dwelling they usually performed that activity. For example, people usually eat in the living room. We used proximity to the dwelling as an attribute for the activities in the residential environment. To determine whether the activity in the residential environment is performed near the dwelling or far away, we asked how far they would usually travel to perform that activity. For

Figure 5.4 Creating a meaning structure for activities in the dwelling and residential environment



example, a person could travel 30 minutes to work.

So for each respondent we have compiled several meaning structures. Adding up the meaning structures of all respondents results in a so-called adjacency matrix; this matrix contains all the relations between activities and meanings that the respondents have mentioned. The adjacency matrix is valued. The more respondents who have mentioned a certain link (for example, watching TV makes them relax), the higher the frequency will be. The graphical representation of an adjacency matrix is called a meaning network. In the network literature these types of networks are referred to as affiliation networks (Wasserman and Faust, 1994) or two-mode networks (Borgatti and Everett, 1997) because they consist of two distinct sets of entities, which in our case are a set of activities and a set of meanings. Each point in the network is called a node. The link between activities and meanings is directed; respondents first gave a reason why a certain activity is important to them (m1), and subsequently they could give a reason why that meaning is important to them (m2). Directed links are represented as arrows. The thickness of the arrows indicates the frequency of the link. The higher the frequency of the link, the thicker the line will be.

The adjacency matrix can be used to calculate different network statistics, for example to identify important nodes in the network (see Table 5.8). A centrality measure is a measure that indicates the importance of a node in a network. So, which meanings are important for a certain activity? There are many different ways to measure centrality. Which measure to choose depends on the characteristics of the network (Borgatti and Everett, 2006). The links in the meaning networks can be classified as 'walks', because both nodes and links between nodes can be repeated in the network. This is an outcome of the open question: Why is that activity/meaning important to you? All respondents could have mentioned any meaning either as answer to the first why-question (m1) or as answer to the second why-question (m2). In other words, the links in the network form an unrestricted sequence (Borgatti, 2005). A good centrality measure for this kind of network is Freeman's normalised in-degree and out-degree measure. The out-degree represents the share of all possible nodes to which a line can lead. An in-degree represents the share of nodes from which a line can originate. A node with a high in-degree is called prestigious; it receives links from many other nodes. A node with a high out-

Table 5.8 Example of dichotomous adjacency matrix

	Meaning 1	Meaning 2	Meaning 3	Total (out-degree)	Nrm out-degree
Activity 1	-	1	1	2	2/(3-1)=1
Activity 2	0	-	0	0	0/(3-1)=0
Activity 3	1	1	-	2	2/(3-1)=1
Total (in-degree)	**1**	**2**	**1**	**4**	
Nrm in-degree	1/(3-1)=0.50	2/(3-1)=1	1/(3-1)=0.50		

degree is called influential; it sends links to many other nodes. Freeman's degree centrality can only be calculated for dichotomous networks, whereas the meaning networks are valued. There does not seem to be an appropriate centrality measure for valued networks (Borgatti, 2005). Besides the Freeman's normalised in- and out-degree, we also present the most frequently mentioned links in the meaning structure. This gives a good impression of important links in the valued network.

Each meaning network contains much information. To make the network representation easier to read, we make two simplifications. First we use a cut-off level, only taking into account links that have been mentioned a minimal number of times. Each network has a different size, so the cut-off level is determined for each network separately (Bagozzi and Dabholkar, 2000). Second, each meaning is assigned one of Schwartz's ten value types. All unique meanings remain in the network representation; still, looking only at the value types reduces the total amount of information. Appendix 10 shows the abbreviations and categorisations of the value types which are used in all network representations.

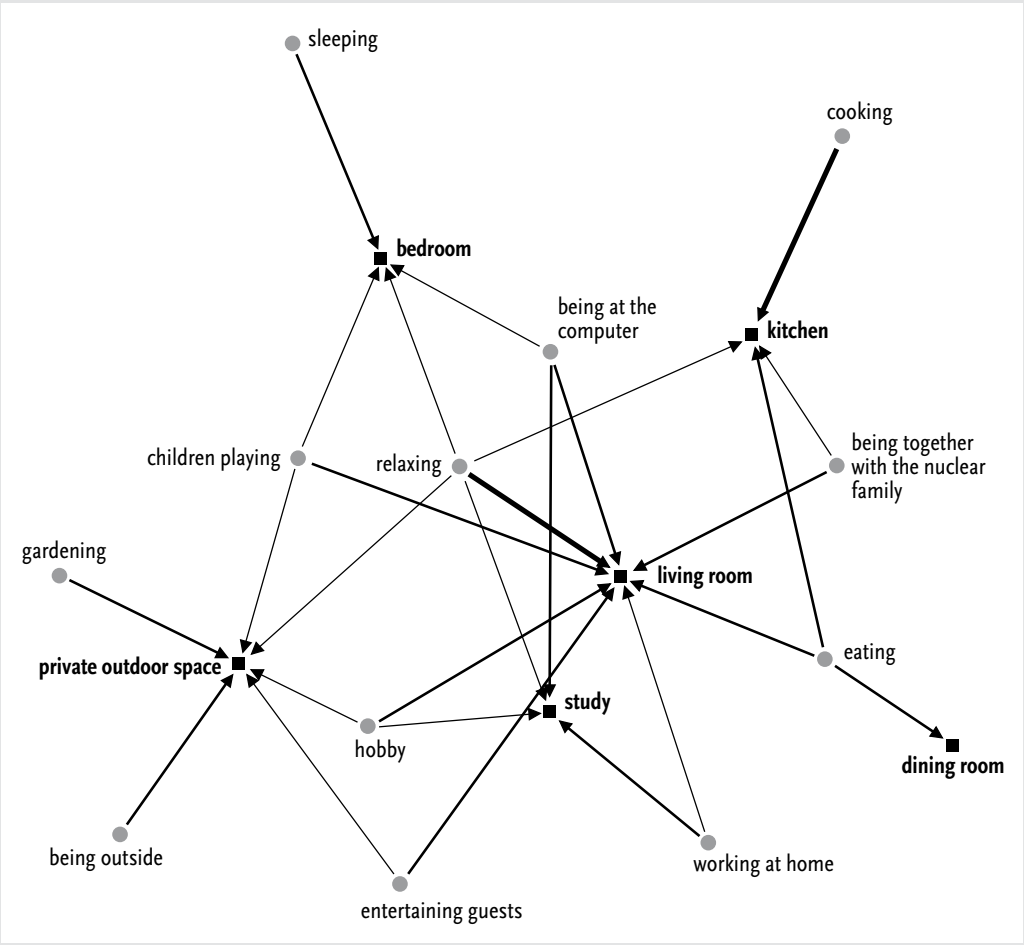
5.4 Meaning structures of activities in the dwelling

In this section we connect the sub-settings of dwellings, i.e. the main rooms in a dwelling, to the activities performed in those rooms and the meanings people attach to them. The separate meaning structures of activities are discussed in detail, taking all links into account. These meaning structures are graphically represented in meaning networks.

5.4.1 The use of the dwelling

Before discussing the separate rooms in the dwelling, we first consider the relations between activities and the rooms in the dwelling. All rooms in the dwelling afford several activities, so we can say that the activities and rooms are well connected. Of all rooms in the dwelling, the living room and private outdoor space contain the largest number of different activities. However, the frequencies of the activities in the living room are considerably higher than those in the private outdoor space. Although the kitchen also contains many activities, only cooking was mentioned many times; the other activities performed there have a much lower frequency. So, the living room can be regard-

Figure 5.5 The use of the dwelling (cut-off level >10)



ed as a locus of activity in the dwelling. Figure 5.5 shows the main relations between activities and rooms in the dwelling (see Appendix 11 for the adjacency matrix of the use of the dwelling).

The activities that are connected to one room only are called isolates. In the network of the use of the dwelling, there are four isolates: cooking, being outside, gardening and sleeping. Because these activities are connected to only one room, the frequency of the link is relatively high. For example, the most frequently mentioned link in the network is cooking in the kitchen (n=363). But gardening in the private outdoor space (n=261) is also mentioned many times. Both links are represented by a thick line; indicating that these activities are often linked to resp. the kitchen and the private outdoor space. These four isolates can be considered room-specific activities, in the sense that they are performed in one particular kind of room. For example, people will not do their gardening in the kitchen or sleep in the garden. So the relation between these activities and rooms is rather rigid. One might assume that no matter in what kind of dwelling a person lives, he will perform that specific activity in

that specific room. In contrast to the room-specific activities, relaxing, hobby, being together with the nuclear family, eating and children playing are connected to many different rooms. These activities are not specific. For example, people can eat in the kitchen, the living room or the dining room. This indicates that other factors, for example the number of rooms in a dwelling, might influence the use of space.

5.4.2 Living room

The part of the house where the most activities are performed is the living room. Eight different activities, mentioned a total of 900 times, take place here. The original data matrix, representing all links between activities that take place in the living room and their meanings, is very large. Therefore we chose a cut-off level of 10. Only links that have been mentioned at least 10 times are included in the network representation.

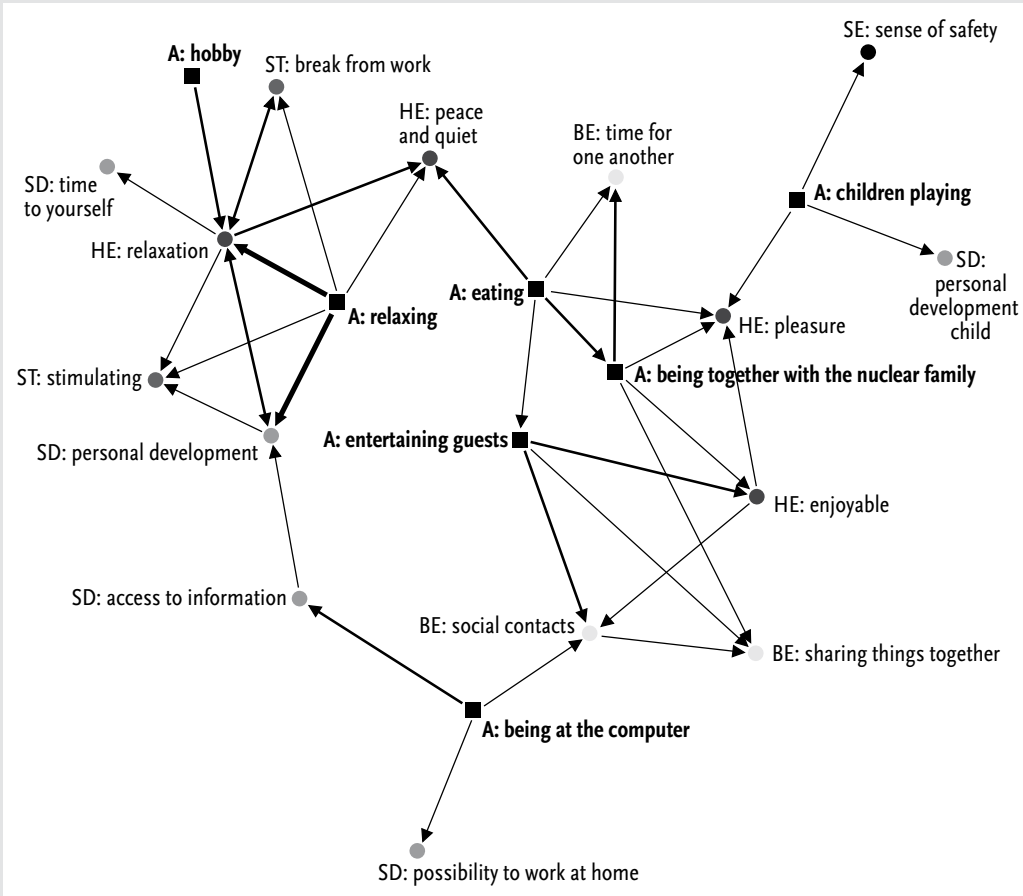
The living room is a multi-functional space (see Table 5.9). It affords leisure activities like relaxing and hobby. Especially relaxing, mainly consisting of watching TV and reading, is an important activity; almost 40 per cent of all activities mentioned for the living room fall under this category. The living room is also where social activities take place: entertaining guests and being together with the nuclear family make up almost 20 per cent of all activities in the living room. For families with children, the living room is also a space where children can play. Quite a few people use their computer in the living room. A small proportion also uses the living room to work at home. However, most people who work at home confine this to a study (see Appendix 11). There is to some extent an overlap between the activities being at the computer and work at home. The meaning network of the study (see Figure 5.8) shows in what way these two activities correspond, but also differ.

Table 5.9 Activities in the living room

Activity	Frequency		Percentage
Relaxing	350		39%
Watching TV		177	
Reading		135	
Doing nothing		16	
Listening to music		10	
Other activities		12	
Eating	136		15%
Entertaining guests	112		12%
Being at the computer	87		10%
Children playing	64		7%
Being together with the nuclear family	61		7%
Hobby	53		6%
Playing music		17	
Handicrafts		13	
Other hobbies		23	
Working at home		37	4%
Total	**900**		**100%**

Because the activity relax-

Figure 5.6 Network representation of the meaning structure for activities in the living room (cut-off level >10)



ing makes up almost 40 per cent of all activities mentioned for the living room, it is evident that the meaning relaxation is an important node in the network, having a high frequency (see Figure 5.6). The activity relaxing (e.g. watching TV or reading a book) is connected to many different meanings. The living room is a place to relax and come to rest (represented by the value type hedonism). Beside that, people feel that watching TV or reading a book can make them forget about their daily work and let them learn new things (represented by the value types stimulation and self-direction). Through the meaning relaxation, the activity hobby is indirectly related to the same meanings as the activity relaxing. So we can say that the activities relaxing and hobby have similar meanings, represented by the value types hedonism, self-direction and stimulation. We could even say that relaxing and performing a hobby are substitutes for one another; they fulfil similar needs. The activities entertaining guests and being together with the nuclear family lie close to one another in the network. Both activities have very similar meanings. Spending time together with family or friends affords social interaction and enjoying the good atmosphere (value types benevolence and hedonism). The activ-

Table 5.10 Key features of the meaning structure for activities in the living room (cut-off level >10)

	Activities in the living room
Most mentioned links	A: Relaxing – relaxation (n=163
	A: Relaxing – personal development (n=117)
	Relaxation – break from work (n=45)
Most mentioned meanings (m1)	Relaxation
	Personal development
	Social contacts
Most mentioned meanings (m2)	Personal development
	Break form work
	Relaxation
Activities connected to most diverse meanings (m1)	A: Relaxing is connected to 5 different meanings (m1)
	A: Eating is connected to 5 different meanings (m1)
Influential meanings	Relaxation sends to 5 different meanings (m2)

ities eating, being together with the family and entertaining guests are all related. One might argue that eating is a social activity. The meaning network shows that dinner time is the time of the day that people spend time together with family or friends. The activity being at the computer seems to have two dimensions. First, using the computer provides people with the possibility to work at home and provides them with access to information, represented by the value type self-direction. Second, by using the computer people can stay in touch with friends and family, represented by the value type benevolence. A rather isolated branch in the network is that of the activity children playing; only through the meaning pleasure is it connected to the rest of the network. The living room is a safe place for children to play and a place where they can learn (value types security and self-direction). These meanings are specific to the activity children playing. One can expect that only for families with young children will this branch exist in the network of activities in the living room. Table 5.10 summarises the key features of the meaning structure for activities in the living room.

At first glance, all the various activities in the living room do not seem to be well interconnected; most activities are only connected to three meanings. Besides, few meanings are connected to each other. Looking at the whole meaning network of activities in the living room, it even seems to be divided into two separate parts. The left-hand side of the network mainly contains value types that serve individual interests, represented by the value types self-direction and stimulation. The right-hand side contains mainly value types that serve the collective interest, represented by benevolence. Still, these two parts are connected to each other through the activities eating and being at the computer. Although these activities have an intermediate out-degree, they occupy an important position in the network. These activities have meanings that represent both individual and collective interests. In other words, eating and being at the computer join two dimensions; the living room as a place to be on your own and the living room as a place to be together with others.

It is striking that the separate activities are connected to so few meanings

Table 5.11 Activities in the kitchen

Activity	Frequency	Percentage
Cooking	371	78%
Eating	61	13 %
Being together with the nuclear family	13	3 %
Relaxing	11	2 %
Children playing	7	2 %
Entertaining guests	7	2 %
Hobby	5	1 %
Total	**475**	**100%**

and that these meanings are not connected to many other meanings. The network has a rather high share of isolates. It does show that different kinds of activities afford different (unique) meanings. For example, safety is only mentioned for the activity children playing. And having a computer at home allows people to work at home. In general we can conclude that the living room is a place to relax; both the activity and its meaning are connected to many other nodes in the network, represented by the value types hedonism, stimulation and self-direction. Another important function of the living room is hosting social interaction, both with members of the nuclear family and with friends. This is represented by the value types benevolence and hedonism.

5.4.3 Kitchen

Seven different activities have been mentioned for the kitchen. The activities that take place there are cooking, eating, being together with the nuclear family, children playing, hobby, relaxation and entertaining guests. Table 5.11 gives an overview of all activities and their frequencies. The most important activity in the kitchen is cooking, while eating is mentioned many times. All other activities were mentioned only a few times and may be regarded as idiosyncratic answers. The network representation has a cut-off level of 5. Even though cooking and eating make up the largest share of activities performed in the kitchen, also the activities entertaining guests and being together with the family are present in the network, like in the network of the living room.

The activity cooking dominates the meaning network of the kitchen (Figure 5.7). For the activity cooking, functional aspects are important. The meanings space, convenience and comfort were mentioned many times and all three are connected together. These meanings are represented by the value types hedonism and self-direction. Convenience affords saving time. The right side of the network shows that cooking and eating also have a social dimension (represented by the value type benevolence). Both cooking and eating afford being together with friends and family. The kitchen is a place where people eat together with friends and family and where they enjoy each other's company. Finally, cooking is also a leisure activity for some respondents. This is illustrated by the link to the meaning hobby. Table 5.12 summarises the key features of the meaning structure for activities in the kitchen.

Figure 5.7 Network representation of the meaning structure for activities in the kitchen (cut-off level >5)

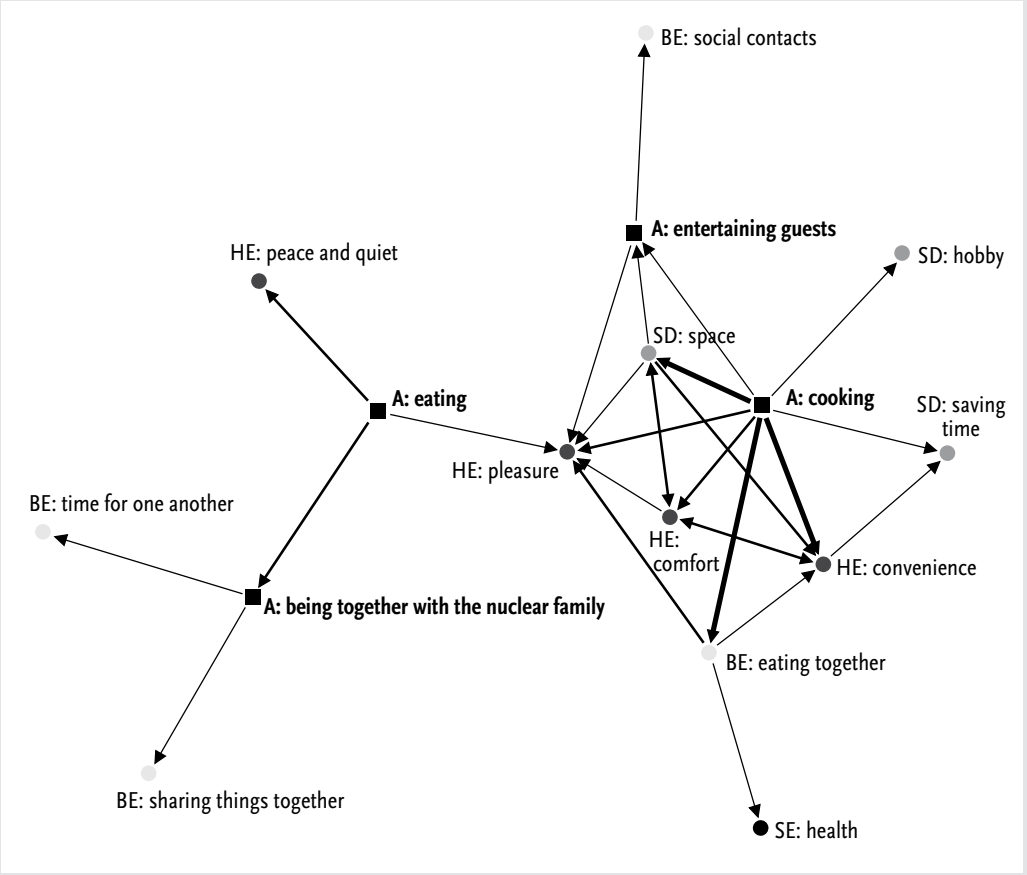


Table 5.12 Key features of the meaning structure for activities in the kitchen (cut-off level>5)

	Activities in the kitchen
Most mentioned links	A: Cooking – space (n=98)
	A: Cooking – convenience (n=69)
	A: Cooking – eating together (n=64)
Most mentioned meanings (m1)	Space
	Convenience
	Eating together
Most mentioned meanings (m2)	Comfort
	Convenience
	Pleasure
Activities connected to most diverse meanings (m1)	A: Cooking is connected to 8 different meanings (m1)
	A: Eating is connected to 3 different meanings (m1)
Influential meanings	Comfort, eating together and space send to 3 different meanings (m2)

5.4.4 Study

Table 5.13 Activities in the study

Activity	Frequency	Percentage
Being at the computer	105	44%
Working at home	72	30%
Hobby	45	19%
Handicrafts	29	
Playing music	5	
Photography	3	
Other hobbies	8	
Relaxing	16	7%
Total	**238**	**100%**

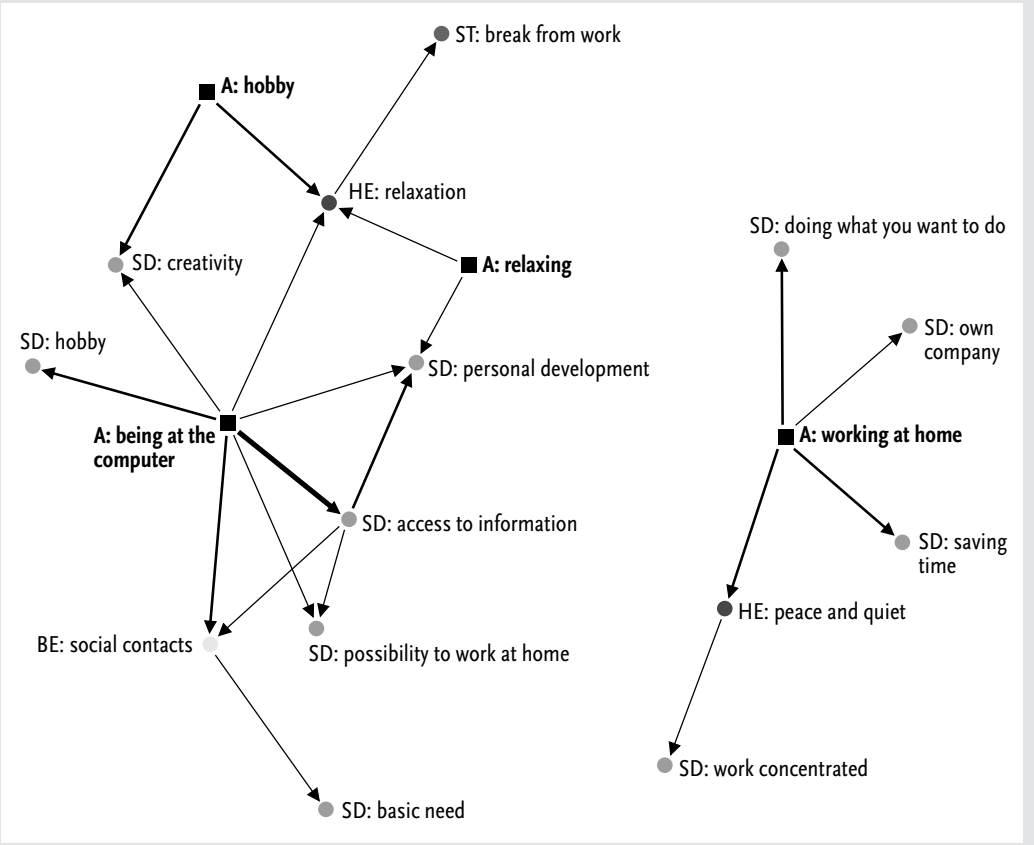
The study is not only a place to work; leisure activities also make up a large share of the activities in the study. Being at the computer is mentioned most. Table 5.13 gives an overview of all activities in the study and their frequencies.

The meaning network of the study (Figure 5.8) has two dimensions. The first is related to work. Working at home means that people can work quietly and in a concentrated manner. It does not seem to matter whether they work in the living room or in the study; both afford the same meanings. By being at the computer and using the internet, people gain access to information and have the possibility to work at home (self-direction). The second dimension is the study as a place for leisure activities. Using the computer allows people to learn new things and relax (hedonism). It is also a way to keep in touch with friends (benevolence). Furthermore, many people use the study for their hobbies, mainly handicrafts. So the study is a place for both work and leisure. It is striking that the meanings attached to working at home form a separate sub-network. In the other sub-network around the activities hobby, relaxing and being at the computer, there is a link between being at the computer and

Table 5.14 Key features of the meaning structure for activities in the study (cut-off level>5)

	Activities in the study
Most mentioned links	A: Being at the computer – access to information (n=42)
	A: Being at the computer – social contacts (n=17)
	A: Hobby – relaxation (n=16)
	A: Hobby – creativity (n=16)
Most mentioned meanings (m1)	Access to information
	Relaxation
	Creativity
Most mentioned meanings (m2)	Personal development
	Break from work
	Social contacts
	Possibility to work at home
	(Don't know)
Activities connected to most diverse meanings (m1)	A: Being at the computer is connected to 7 different meanings (m1)
	A: Working at home is connected to 4 different meanings (m1)
Influential meanings	Access to information sends to 3 different meanings (m2)

Figure 5.8 Network representation of the meaning structure for activities in the study (cut-off level >5)



the possibility to work at home. Apparently having the possibility to work at home does not mean that people actually do work at home. Having a computer with internet access allows people to work at home. In contrast, people who mentioned the specific activity working at home do this because they can save time or work in a concentrated manner. Table 5.14 summarises the key features of the meaning structure for activities in the study.

5.4.5 Private outdoor space

The private outdoor space consists mainly of gardens; over 70 per cent of all respondents have or prefer to have a garden and approximately 20 per cent have or prefer to have a balcony. A total of nine different activities were mentioned for the private outdoor space of the dwelling. Those mentioned most frequently are gardening and being outside. Their frequency is so high because these activities are done solely in the private outdoor space; all other activities are also performed in other parts of the dwelling, mainly in the living room. It seems that if weather permits, the private outdoor space takes over the function of the living room. Grampp (1990) also found this in his research on the meaning of the domestic garden. He classified this as the living

Table 5.15 Activities in the outdoor space of the dwelling

Activity	Frequency	Percentage
Gardening	261	50%
Being outside	146	28%
Entertaining guests	36	7%
Children playing	33	6%
Relaxing	17	3%
Hobby	12	2%
Eating	7	1%
Being with the nuclear family	7	1%
Total	**519**	**100%**

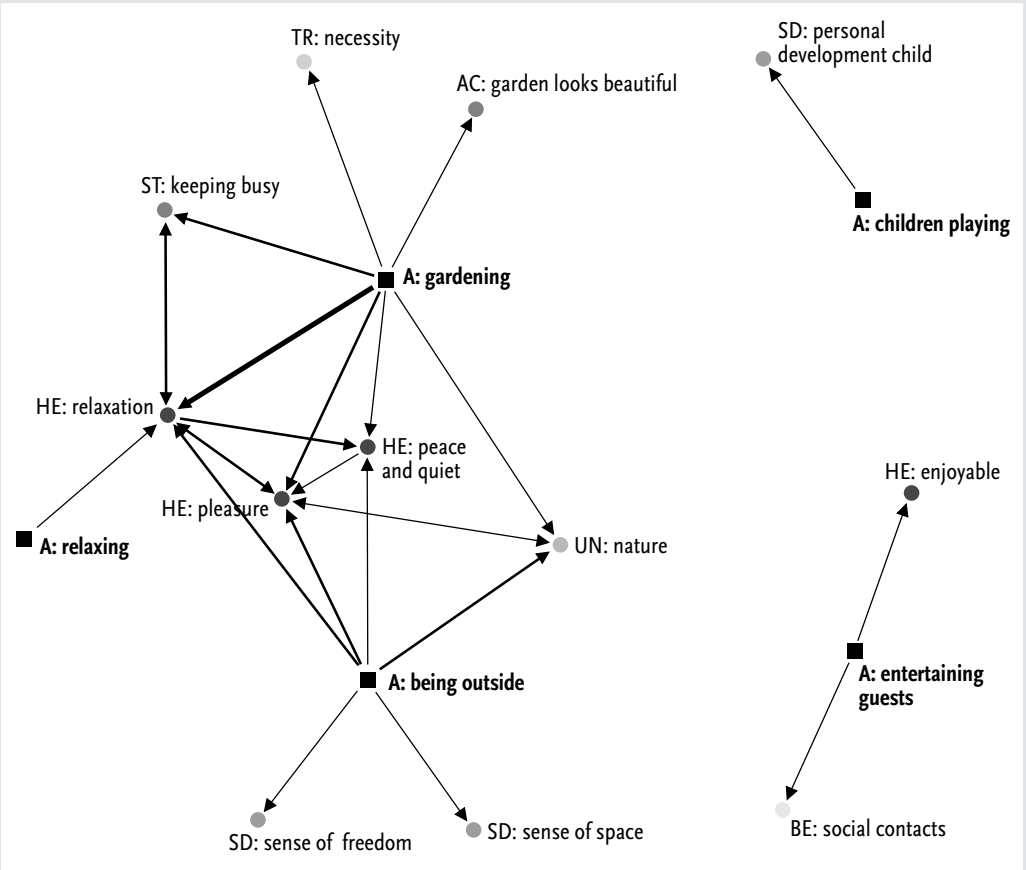
garden; weather permitting, the garden takes over the function of the living room (Grampp, 1990). Table 5.15 gives an overview of all outdoor activities and Table 5.16 summarises the key features of the meaning structure.

Because the private outdoor space hosts so many different activities, its meaning network is very complex (Figure 5.9). The private outdoor space seems to be a place to relax and enjoy; the meanings relaxation and pleasure are both influential and prestigious. The activity gardening was mentioned many times. People believe that gardening is both a way to relax and a nice way to keep busy (hedonism and stimulation). At the same time, some people see gardening as a necessity; it just needs to be done. Through gardening people can make their garden look beautiful. According to Bhatti (1999) the garden can be regarded as a showpiece (especially the garden in front of the house). With a well-kept and nicely designed garden, people can make a good impression on passers-by and neighbours. But to maintain the garden well does require some effort. Some people enjoy it, whereas others see it as a chore (Bhatti, 1999). Another activity that has been mentioned many times is being outside. This affords pleasure: just enjoying being outside, probably enjoying the nice weather. But being outside also affords a sense of nature, a sense of freedom and a sense of space. These meanings show that the private

Table 5.16 Key features of the meaning structure for activities in the private outdoor space (cut-off level>8)

	Activities in the private outdoor space
Most mentioned links	A: Gardening – relaxation (n=103)
	A: Being outside – pleasure (n=40)
	A: Gardening – keeping busy (n=39)
Most mentioned meanings (m1)	Relaxation
	Pleasure
	Keeping busy
Most mentioned meanings (m2)	Pleasure
	Peace and quiet
	Relaxation
Activities connected to most diverse meanings (m1)	A: Being outside is connected to 8 different meanings (m1)
	A: Gardening is connected to 7 different meanings (m1)
Influential meanings	Relaxation sends to 5 different meanings (m2)
	Pleasure sends to 3 different meanings (m2)

Figure 5.9 Network representation of the meaning structure for activities in the private outdoor space (cut-off level >8)



outdoor space has a unique function of spaciousness, which is not afforded by any other setting of the dwelling. The private outdoor space is also a safe place for children where they can play and learn. And last but not least, the garden or balcony is considered to be a good place to entertain guests and enjoy their good company (benevolence).

5.4.6 Other activities in the dwelling

The activities maintenance of the dwelling and cleaning take place everywhere in the dwelling. These two activities will be discussed separately in this section.

The most influential meaning for the activity cleaning is hygiene (see Table 5.17); hygiene is connected with almost 90 per cent of meanings (m2). The most prestigious ones are hygiene, peace and quiet and pleasure. Respondents enjoy a clean and tidy house, as indicated by the three-way link between the meanings neat and tidy house, sense of tidiness and pleasure. The most frequently mentioned links in the network are hygiene – neat and tidy house

Table 5.17 Key features of the meaning structure for the activity cleaning

	Cleaning
Most mentioned link	Hygiene – neat and tidy house (n=15)
	Neat and tidy house – pleasure (n=14)
	Hygiene – health (n=14)
Nrm in-degree	Hygiene (56)
	Pleasure (56)
	Neat and tidy house (44)
	Sense of tidiness (44)
	Peace and quiet (44)
Nrm out-degree	Hygiene (89)
	Neat and tidy house (67)
	Pleasure (67)

Table 5.18 Key features of the meaning structure for the activity maintenance of the dwelling

	Maintenance of the dwelling
Most mentioned link	Adapt dwelling to own needs – increase residential satisfaction (n=13)
	Increase residential satisfaction – pleasure (n=8)
	Increase residential satisfaction – adapt dwelling to own needs (n=6)
Nrm in-degree	Increase residential satisfaction (71)
	Keeping busy (57)
Nrm out-degree	Adapt dwelling to own needs (86)
	Increase residential satisfaction (71)

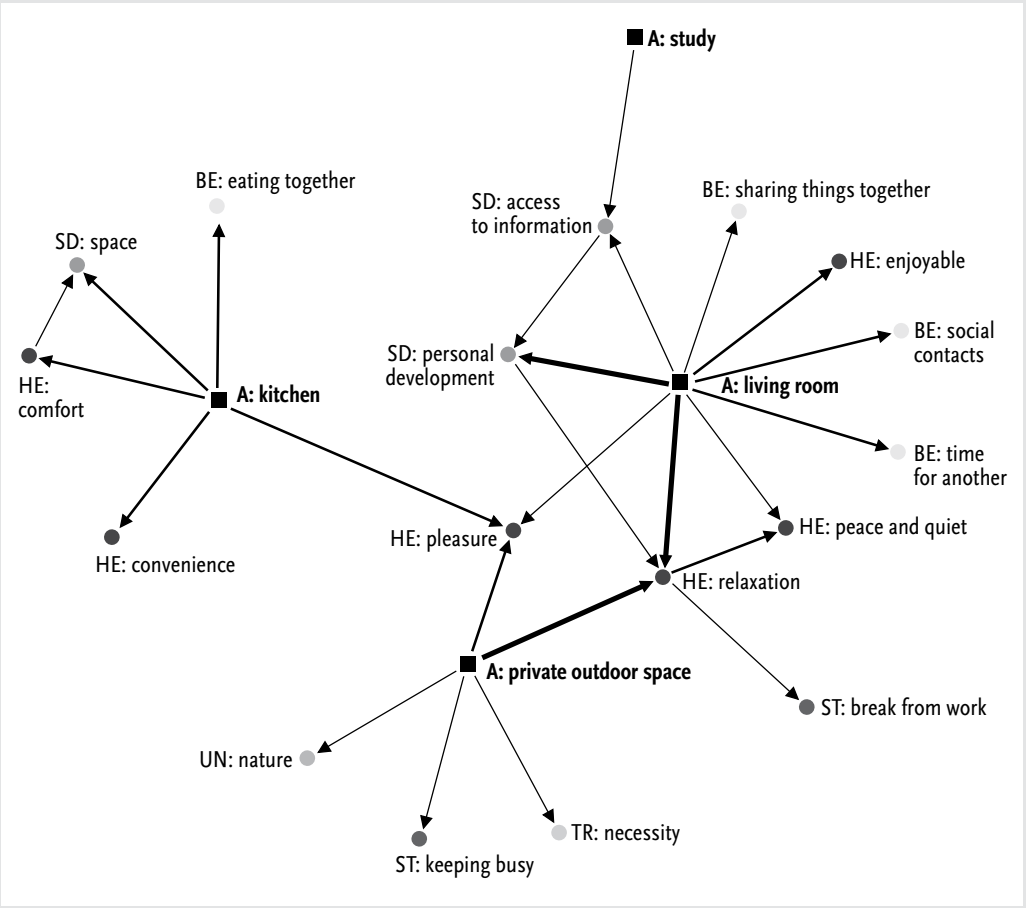
(n=15), neat and tidy house – pleasure (n=14) and hygiene – health (n=14).

The most frequently mentioned connection in the meaning structure for the activity maintenance of the dwelling is adapt dwelling according to own needs – increase residential satisfaction (n=13). Being able to modify the dwelling according to your own preference is an important aspect of maintenance; both meanings are influential and prestigious in the network. Maintenance of the dwelling also has some more practical reasons: saving money, preservation of the dwelling and value of the dwelling (see Table 5.18).

5.4.7 Most mentioned meanings for activities in the dwelling

This section gives an overview of the most mentioned meanings for activities in the dwelling. In order to get a clear overview of the important relations between settings and meanings, on the one hand, and activities and meanings on the other, we aggregated the meaning structures of the dwelling. These aggregated meaning structures were constructed in two steps. First, in the matrix of the living room for example, all rows presenting the different activities in the living room were added up to form one row: activities in the living room. This procedure was repeated for all sub-settings of the dwelling. In

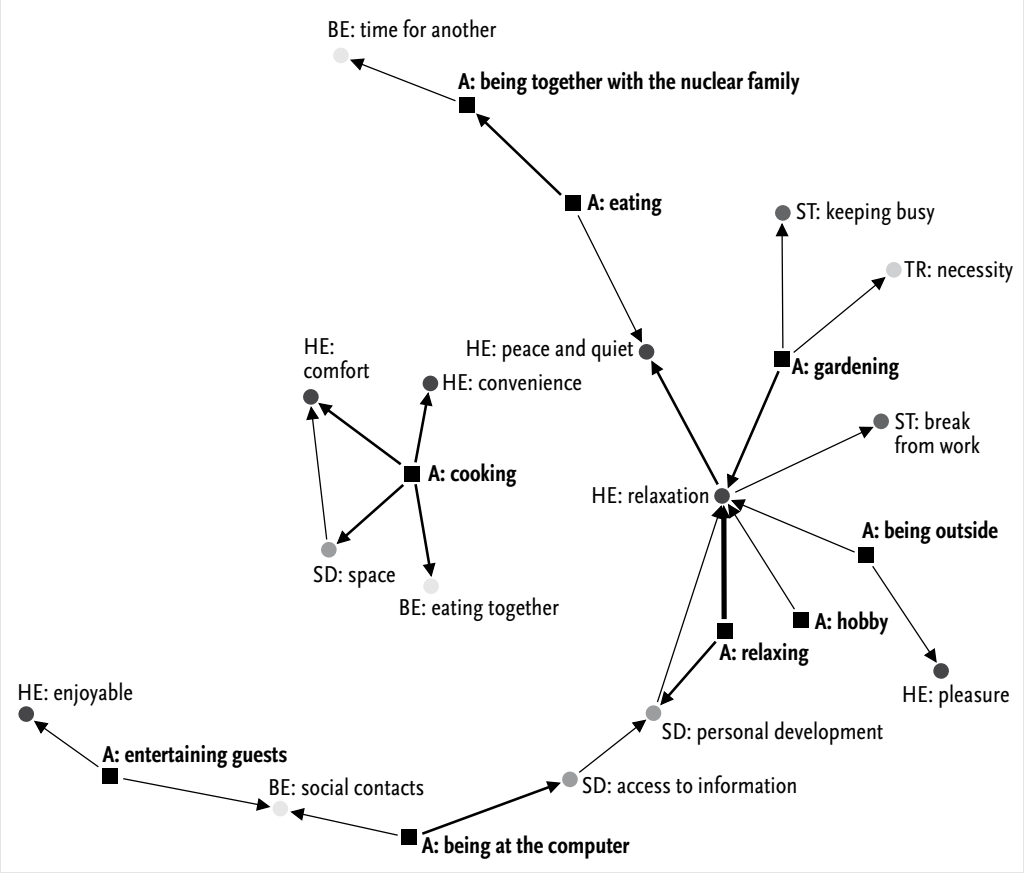
Figure 5.10 Network representation of most mentioned affordances of the dwelling (cut-off level >30)



the second step, all columns presenting the meanings connected to all rooms were added up to form one overall matrix, which is represented in Figure 5.10. In the other representation, only activities have been taken into account, not the sub-setting these activities have been assigned to. So, Figure 5.11 represents the relations between activities and meanings in the dwelling without taking the sub-setting into account.

Figure 5.10 contains the most frequently mentioned meanings for the different rooms. This aggregated meaning network shows the relation between the various rooms. Like Figure 5.5, representing the use of the dwelling, Figure 5.10 clearly shows that the living room is a very central place; it contains many diverse activities and meanings. This is also true for the private outdoor space. There, however, the activities gardening and being outside dominate. The kitchen and the study occupy a more isolated position. Both sub-settings are rather specific in their use and in the meaning attached to the activities. The study is used for work or hobby and the kitchen to cook or eat together with family or friends. So the living room is a centre of activities with many diverse meanings. Benevolence is an important value type for the living room.

Figure 5.11 Network representation of most mentioned meanings for activities in the dwelling (cut-off level >30)



Meanings that fall under the value type benevolence – such as social contacts, sharing things together, being with the nuclear family – have been mentioned many times. These meanings clearly reveal that it is through social interaction with the nuclear family, friends or family members that the living room becomes a meaningful place. Besides benevolence, hedonism and self-direction are also important value types for activities in the living room. The living room is a place to relax and enjoy the good company of friends. Using the computer or watching TV gives people access to information and allows them to keep up with the world news and learn new things. The private outdoor space is a place to relax, enjoy nature and, through the activity gardening, keep busy. However, some people also experience gardening as a necessity. The study seems to be the room that most affords self-direction: it is a place where the individual can determine the settings. Finally, even though the kitchen affords many meanings, it takes a rather separate position in the network: only through the meaning pleasure is it connected to the rest of the network. The functional aspects of having enough space to cook, convenience and the comfort of a modern kitchen are important. Besides the function-

al aspects, the kitchen also affords benevolence; one can eat with family or friends in the kitchen.

Figure 5.11 shows the most mentioned meanings for activities in the dwelling. This aggregated meaning network shows the relation between the different activities; in other words, it shows how the dwelling functions as a whole. Looking at the meanings attached to the activities performed in the dwelling, it becomes clear that relaxation takes an important position in the network. Relaxation connects all leisure activities in the dwelling to one another. That means that the activities gardening, hobby, relaxing, being outside and being at the computer have a shared meaning; all these activities fulfil the need for relaxation. In contrast, the activity cooking forms a sub-network in the meaning network; it is not connected to any other activity in the dwelling. Functional aspects like space, convenience and comfort are important, but only for the activity cooking. Besides its functional aspects, cooking fulfils the need for social interaction, expressed as eating together with friends or family. The network also shows that the activity eating has a link with the meaning being together with the family. So eating together with meaningful others occupies two different positions in the network. Finally, the network shows that the activity entertaining guests also fulfils the need for social interaction: having friends over in the dwelling affords social contacts and creates an enjoyable atmosphere.

5.5 Meaning structures of activities in the residential environment

The attributes for activities in the residential environment are more difficult to determine than those for activities in the dwelling. For most activities in the residential environment, the place of the activity is already given, for example bringing the children to school. Still, it might also be of interest to know whether an activity takes place very close to the dwelling or further away. For the activities going out, commuting, shopping and taking the children to school, information on the proximity to the dwelling is available. Four distinct categories can be made: 1-5 minutes; 6-15 minutes; 16-30 minutes and over 30 minutes. The network representations are rather similar. Therefore only the networks of activities within 15 minutes of the dwelling and over 15 minutes away are presented here. The remaining activities (daily errands, recreation, sports, visiting friends and going to a club) will be discussed separately.

5.5.1 Activities within 15 minutes of the dwelling

The activity going out was mentioned most often, both within 5 minutes of the dwelling and 6-15 minutes away (see Table 5.19). For the majority of all re-

Table 5.19 Activities within 5 minutes to over 30 minutes travel time from the dwelling

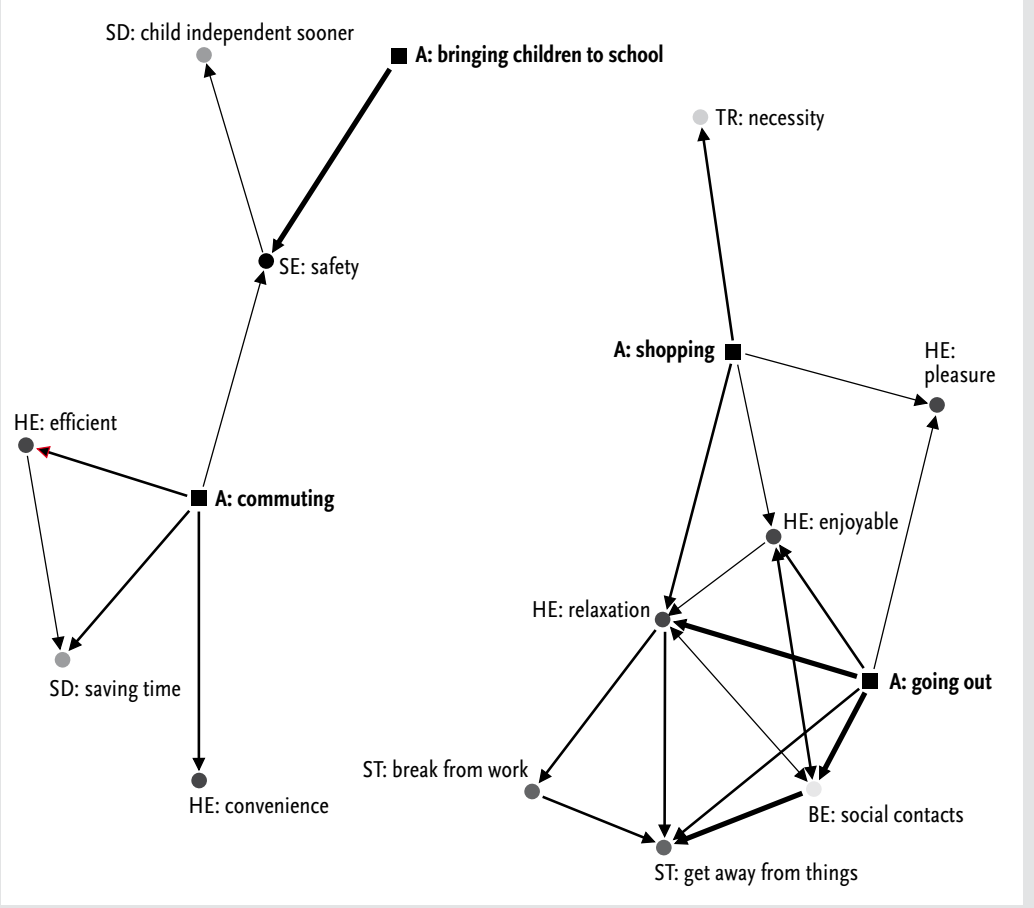
Activity	Frequency (5 min)	Frequency (6-15 min)	Frequency (16-30 min)	Frequency (> 30 min)	Total
Going out	96 (35%)	114 (42%)	40 (15%)	22 (8%)	272 (100%)
Commuting	35 (17%)	75 (36%)	59 (29%)	37 (18%)	206 (100%)
Shopping	47 (30%)	61 (38%)	22 (14%)	29 (18%)	159 (100%)
Taking the children to school	61 (60%)	35 (35%)	5 (5%)	0	101 (100%)
Total	**239 (32%)**	**285 (39%)**	**126 (17%)**	**88 (12%)**	**738 (100%)**

Table 5.20 Key features of the meaning for activities in the residential environment within 15 minutes travel time of the dwelling (cut-off level >10)

	Activities within 15 minutes travel time of the dwelling
Most mentioned links	A: Going out – relaxation (n=67)
	A: Taking the children to school – safety (n=65)
	A: Going out – social contacts (n=50)
Most mentioned meanings (m1)	Relaxation
	Safety
	Social contacts
Most mentioned meanings (m2)	Getting away from things
	Social contacts
	Enjoyable
	(Don't know)
Activities connected to most diverse meanings (m1)	A: Going out is connected to 5 different meanings (m1)
	A: Commuting and fun shopping are connected to 4 different meanings (m1)
Influential meanings	Social contacts sends to 3 different meanings (m2)
	Relaxation sends to 3 different meanings (m2)

spondents who mentioned taking the children to school, the school is within 5 minutes distance of their dwelling. Even though the frequency of people taking the children to school is low, the second most frequently mentioned link runs from the activity taking the children to school to safety. So, even though fewer respondents mentioned taking the children to school, many of them find it important that the route to school is safe. Therefore this link is very prominent in the meaning network of activities within 15 minutes of the dwelling (Figure 5.12). Having a safe route to travel to school allows children to be independent sooner. All the other reasons that have been mentioned for the activity taking the children to school are idiosyncratic. The left part of the network represents daily routines of going to work and bringing the children to school. Functional aspects such as safety, saving time, efficiency and convenience are important. These meanings are represented by the value types hedonism, self-direction and security. In the right part of the network, the leisure activities going out and fun shopping are represented. Going out is mentioned many times and affords relaxation. Going out is also an activity that provides a way to forget about work and daily worries, represented by the val-

Figure 5.12 Network representation of the meaning structure for activities in the residential environment within 15 minutes travel time of the dwelling (cut-off level >10)



ue types hedonism and stimulation. Finally, going out is a way to meet friends (benevolence). Shopping was mentioned fewer times. Most people enjoy shopping; it affords relaxation and enjoyment (hedonism). However, some people also see shopping as a necessity. They see fun shopping (recreational shopping to buy durable consumer goods) as a chore. Table 5.20 summarises the key features of the meaning structure for activities in the residential environment within 15 minutes travel time of the dwelling.

5.5.2 Activities over 15 minutes from the dwelling

For the activities within 16-30 minutes from the dwelling, commuting is the most frequently mentioned activity (see Table 5.19). None of the respondents has to travel more than 30 minutes to bring their children to school. As one might expect, for activities with a journey of over 30 minutes, the time aspect becomes even more important. The two-way link between commuting, saving time and efficiency is very prominent in the left part of the network. There is

Figure 5.13 Network representation of the meaning structure for activities in the residential environment over 15 minutes travel time from the dwelling (cut-off level >5)

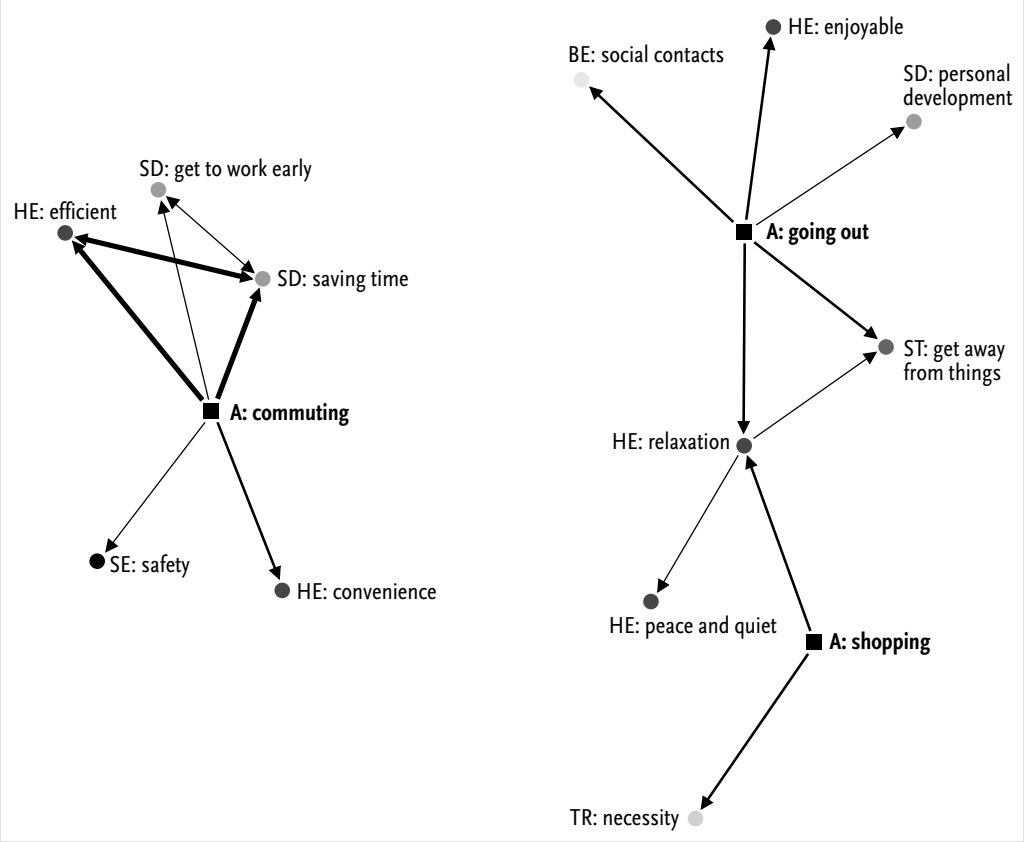


Table 5.21 Key features of the meaning structure for activities in the residential environment over 15 minutes travel time from the dwelling (cut-off level >5)

	Activities over 15 minutes travel time from the dwelling
Most mentioned links	A: Commuting – saving time (n=29)
	A: Commuting – efficiency (n=26)
	Efficiency – saving time (n=18)
Most mentioned meanings (m1)	Relaxation
	Saving time
	Efficiency
Most mentioned meanings (m2)	Saving time
	Efficiency
	Getting away from things
	(Don't know)
Activities connected to most diverse meanings (m1)	A: Going out is connected to 5 different meanings (m1)
	A: Commuting is connected to 5 different meanings (m1)
Influential meanings	Relaxation sends to 2 different meanings (m2)
	Saving time sends to 2 different meanings (m2)

also a link between commuting and getting to work early. The meaning network of the activities going out and shopping contains the same (though fewer) meanings as in the network of activities within 15 minutes of the dwelling (see Table 5.21).

Summarising, safety is very important for activities within 15 minutes of the dwelling. Safety is connected many times to taking the children to school. However, safety is also important for commuting. If the distance one travels to work gets longer (over 15 minutes), time-saving becomes more important. Proximity does not seem to have much effect on the meanings afforded by going out and shopping. Meanings belonging to the value types hedonism, stimulation and benevolence are most important for activities in the residential environment over 15 minutes travel time from the dwelling.

5.5.3 Other activities in the residential environment

The remaining activities are daily errands, visiting friends[2], recreation, sports and going to a club. For these activities, no information on travel time is available. The main reason is that these times can be so different. For example you can visit friends living in the same neighbourhood one time and the next time you can visit friends who live 150 kilometres away.

For daily errands (n=523), people mainly mention functional aspects (see Table 5.22). People consider it important to have shops for daily errands close by. They find that convenient, and it is a way to save time. For the products they want to buy, people find the range of choice and the quality important. Also health is taken into consideration when buying food. Finally, a separate branch indicates that for some respondents doing daily errands also has a social aspect: it is an occasion to meet other people.

For the activity recreation (n=423), relaxation is the most influential meaning; it is connected to many meanings (see Table 5.23). But nature is connected to many meanings as well. Recreation brings diversion from everyday life and work; it also brings peace and quiet and pleasure. For some respondents, it is a way to stay fit; there is a two-way link between exercise and health. In the literature, meanings connected to recreation (specifically health and nature) are mostly related to suburban and rural living (Feijten *et al.*, 2008; Lindberg *et al.*, 1992). The correspondence analyses (Figure 5.1) show that nature is associated with a suburban type of residential environment. Health, however, is not associated with any particular type of residential environment, nor are other central meanings like relaxation and pleasure. Furthermore, type of residential environment does not have a significant effect on the activity recreation;

2 The meaning structure of the activity visiting friends is very similar to that of the activity entertaining guests. Therefore it will not be discussed separately.

Table 5.22 Key features of the meaning structure for the activity daily errands

	Daily errands
Most mentioned link	Close by – convenience (n=73)
	Close by – saving time (n=42)
Nrm in-degree	Convenience (67)
	Price (56)
Nrm out-degree	Close by (89)
	Good quality products (89)

Table 5.23 Key features of the meaning structure for the activity recreation

	Recreation
Most mentioned link	Health – don't know (n=35)
	Other – don't know (n=30)
	Relaxation – don't know (n=29)
Nrm in-degree	Relaxation (83)
	Pleasure (67)
	Peace and quiet (58)
	Break from work (58)
Nrm out-degree	Relaxation (83)
	Nature (75)
	Pleasure (67)

Table 5.24 Key features of the meaning structure for the activity doing sports

	Sports
Most mentioned link	Health – don't know (n=110)
	Relaxation – health (n=27)
	Health – relaxation (n=22)
Nrm in-degree	Health (83)
	Get away from things (67)
Nrm out-degree	Health (100)
	Relaxation (100)

Table 5.25 Key features of the meaning structure for the activity going to a club

	Go to a club
Most mentioned link	Social contacts – community spirit (n=13)
	Social contacts – enjoyable (n=11)
	Community spirit – social contacts (n=8)
Nrm in-degree	Social contacts (86)
	Relaxation (57)
	Personal development (57)
Nrm out-degree	Social contacts (100)
	Relaxation (86)
	Community spirit (57)

regardless of where one lives, people mentioned recreation equally. Therefore recreation seems to be an important activity in the residential environment for everyone. Because recreation is a collective term for different outdoor activities in the residential environment, it was rather difficult to fit all answers into categories. Therefore the category 'other meanings' is large and occupies a central place in the network.

For the activity sport (n=292), health is by far the most important meaning (both influential and prestigious) (see Table 5.24). Many respondents could not give an answer to the question why health was so important to them (health – don't know (n=110)). The second most mentioned connection in the meaning structure of sport is relaxation – health (n=27). Furthermore, respondents see sport as a good diversion from everyday life and work. For some respondents sport also has a social dimension.

The most central meaning, both influential and prestigious, for the activity going to a club (n=114) is social contacts (see Table 5.25). An important two-way link in the network is social contacts – community spirit (n=21). Besides that, going to a club seems to be on the one hand a diversion from everyday life and work and on the other hand an opportunity for personal development

and creativity. In this sense it is similar to the activity hobby, but it adds the meanings social contacts and community spirit.

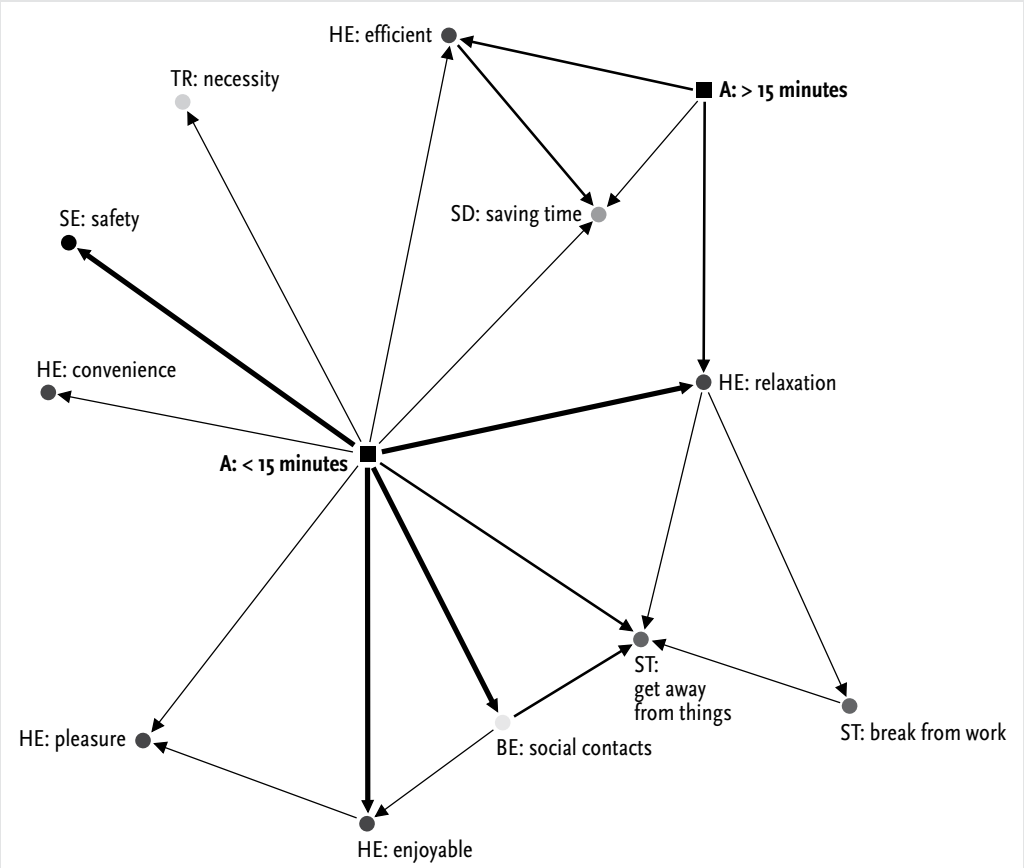
5.5.4 The most mentioned meanings for activities in the residential environment

This section attempts to answer the research question: What are the most mentioned meanings for activities in the residential environment? Again, we present two meta-analyses. Figure 5.14 presents the most frequently mentioned meanings of activities within 15 minutes of the dwelling and activities over 15 minutes from the dwelling. This meaning network shows the relation between meanings attached to activities performed close to the dwelling and far away from it. Figures 5.15 presents the most frequently mentioned meanings for activities in the residential environment, regardless of whether the activities are performed nearby or far away. It gives an impression of how the various activities in the residential environment are linked to each other.

Most activities are performed within 15 minutes of the dwelling. Apparently activities within 15 minutes of the dwelling spring to mind first when people are asked to name important activities in the residential environment. Since most activities are performed nearby, most links radiate from that point; therefore Figure 5.14 depicts the features in the shape of a star. At the left top, it shows all functional meanings like convenience, saving time and efficiency. The meanings convenience, safety and necessity are not linked to any other meaning; they are isolates. In other words, these meanings are only important for one particular activity. This is especially true for the meaning safety. Safety is very strongly related to the activity taking the children to school (see Section 5.5.1). The meanings saving time and efficiency connect activities within 15 minutes of the dwelling to activities performed over 15 minutes from the dwelling. These are mostly related to commuting. So regardless of whether people have to travel a long distance or not, both saving time and efficiency are important meanings. Also the meaning relaxation connects the activities nearby (within 15 minutes) to those further away (over 15 minutes) from the dwelling. The bottom right part of the network shows the meanings connected to leisure activities: pleasure, enjoyable and relaxation. People feel that these leisure activities make them forget about their day-to-day worries and work. Finally, there is only one node that shows that the residential environment is also a place to meet friends (social contacts). This network is well interconnected. That means that regardless of whether an activity is performed close by the dwelling or further away, similar meanings are important.

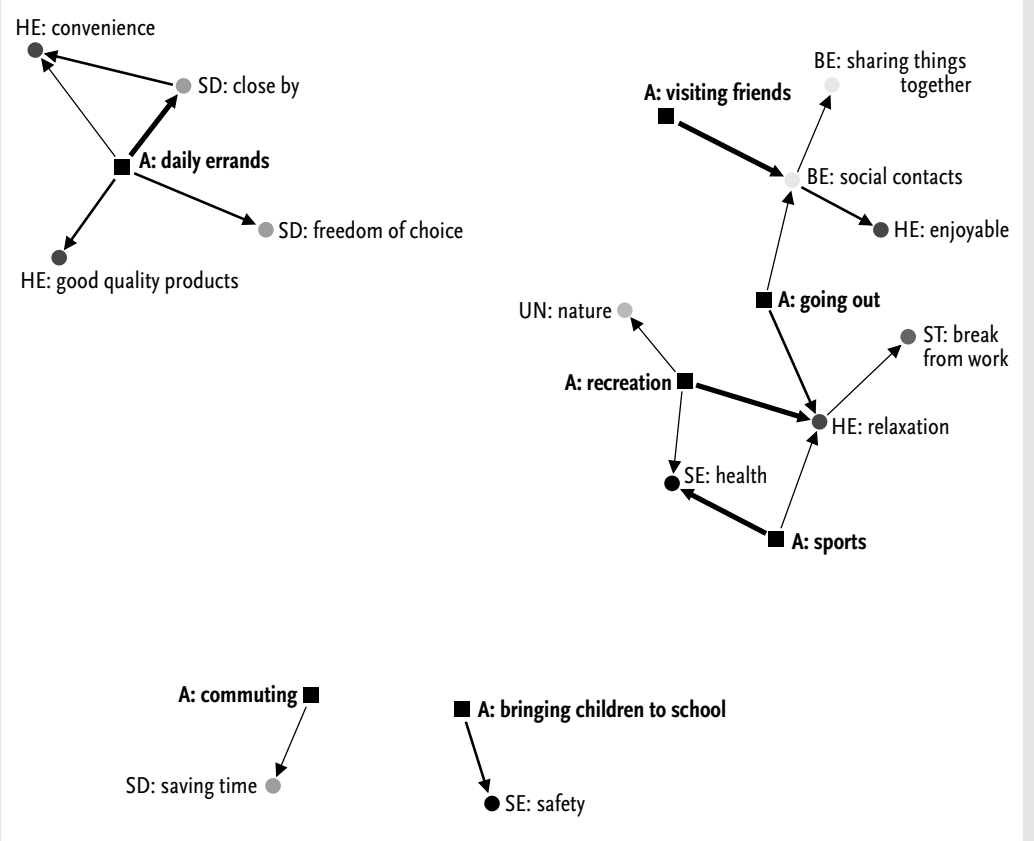
The activities performed in the residential environment (Figure 5.15) are fragmented. There is a sub-network around daily errands, which is only con-

Figure 5.14 Network representing the most mentioned affordances of the residential environment (cut-off level >20)



nected to functional meanings. People find it convenient to have shops close by. They also find it convenient to have access to good quality products and to make their own choices about what to buy. Another sub-network is the relation between commuting and saving time. The third sub-network is the link between taking the children to school and safety. Both activities have only one link in the aggregated network. That means that saving time is the most frequently mentioned aspect of commuting and having a safe route to travel is the most mentioned aspect of taking the children to school. Finally, the largest sub-network consists of leisure activities. People feel that sport and recreation make them relax and stay fit and healthy at the same time. However, recreation is closely linked to relaxation, whereas sport is most closely linked to health. People feel they can enjoy nature through recreational activities. Both going out and visiting friends fulfil the need for social interaction; people can meet friends and share things together. So the dwelling is not the only important place for social interaction; the residential environment also affords social interaction with friends. Finally, by going out in the residential environment, people can forget about work. This sub-network of leisure activ-

Figure 5.15 Network representing the most mentioned meanings of activities in the residential environment (cut-off level >50)



ities shows that different activities fulfil similar needs; these activities can substitute for one another. In other words, the particular leisure activities can change but the meanings will stay the same.

5.6 Conclusion

This chapter presented the meaning structures of different settings in the dwelling and residential environment. One of the main assumptions of the conceptual framework is that the specific meanings of dwelling are to be found in the relations between activities of people and features of the dwelling and the residential environment. The meaning structures visualise these relations. They show the relation between the setting of the environment (e.g. living room, private outdoor space), activities (e.g. watching TV, gardening) and meanings (e.g. relaxation, nature). In other words, these meaning structures define the specific people-environment relations of sub-settings in the dwelling and the residential environment. This concluding section addresses research questions 4 to 7:

4. To what extent do general meanings influence activities, also controlling for socio-demographic variables, dwelling and residential environment features?
5. To what extent do different orientations of general meanings exist for different groups of people subdivided by type of residential environment, age and household composition?
6. What are the most mentioned meanings for activities in the dwelling?
7. What are the most mentioned meanings for activities in the residential environment?

The first two subsections focus on the relation between personal and environmental characteristics, on the one hand, and meanings on the other. The last two subsections focus on the relation between activities in the dwelling and residential environment and the meanings people attach to these activities.

5.6.1 Relations between activities and general meanings

In this section, we try to answer the fourth research question: To what extent do general meanings influence activities, also controlling for socio-demographic variables, dwelling and type of residential environment features? By adding general meanings to the logistic regression models, we can ascertain if and to what extent general meanings (i.e., meanings connected to several activities) contribute when estimating activities in the dwelling and residential environment. For almost all activities, one or more general meanings came up as significant predictors. Almost all of the models that include general meanings have a higher value for Nagelkerke R^2 than the models without general meanings. In other words, the percentage of explained variance of the logistic regression models increases. Thus, models including general meanings contribute positively to estimating the activities performed. Especially for the activities taking the children to school, doing sports, gardening, going out, visiting friends and entertaining guests, the Nagelkerke R^2 increased substantially.

The general meaning safety is very important for the activity taking the children to school; almost everyone who mentioned the activity taking the children to school has linked this activity to safety. So, for people who have young children that need to be brought to school, safety is an important meaning. This is usually expressed as having a safe route to travel to school with respect to traffic and having pavements to walk on and pedestrian crossings. For the activity sports, the general meaning health is important. So people who find it important to be healthy are more likely to have mentioned doing sports. The meaning structure of recreation shows that health is also frequently related to the activity recreation. But health is not a significant predictor for recreation; relaxation is more important for recreation.

Table 5.26 Overview of general meanings contributing significantly to explaining activities

Activity	Nagelkerke R^2 without general meanings	Nagelkerke R^2 including general meanings	General meaning (odds ratio >5)
Taking the children to school	0.375	0.643	Safety
Doing sports	0.073	0.534	Health
Gardening	0.226	0.449	Keeping busy
Visiting friends	0.040	0.472	Sharing things together
Social contacts			
Going out	0.196	0.369	Getting away from things
Entertaining guests	0.090	0.311	Sharing things together
Cooking	0.021	0.285	Space

This shows the different motivations for engaging in sports and recreation. People who like to keep busy are more likely to have mentioned gardening. Looking at the activity gardening from this perspective, gardening can be considered an active leisure activity. In general, people like to work in their garden. Those who find it important to share things with other people and to be in contact with others are more likely to have mentioned the activity visiting friends and entertaining guests. People who find it important to get away from things are more likely to have mentioned the activity going out. So, by going to the cinema or a bar, people can forget about their day-to-day worries and let things rest for an evening. The meaning structures of visiting friends or entertaining guests and going out reveal considerable overlap in meanings. For example, the meaning social contacts has a central position in all three networks. As these analyses show, for visiting friends and entertaining guests the emphasis lies on people being social creatures (sharing things together and social contacts; value type benevolence), whereas the emphasis of the activity going out lies on the individual (getting away from things; value type stimulation). Finally, space is a very important functional prerequisite for the activity cooking. Cooking is a very practical act; these data show that having sufficient space to cook is important to people.

Based on the logistic regression models including general meanings, we can conclude that besides socio-demographic, dwelling and residential environment features, also general meanings contribute positively to explaining activities. Table 5.26 gives an overview of the general meanings that contribute most significantly when estimating activities. These general meanings reflect people's motivations for the activities they perform. The first assumption of the conceptual framework is that individuals pursue goals in their lives, and their actions are goal-oriented. Therefore their actions, ideas, and preferences are aimed at reaching these goals. These general meanings indicate which meanings are important for which activity. For example, people who find it important to stay healthy do sports. Adding general meanings to the logistic regression models for the activities children playing, hobby and working at home did not result in any other outcomes. For these activities unique meanings are more important. For example, for the activity children playing, the most frequently mentioned meanings are sense of safety and

personal development of the child. Both are unique meanings, related only to the activity children playing. These are present in the meaning structures.

5.6.2 Orientations of general meanings

The logistic regression models analysed the relation between general meanings and activities. Logistic regression can only look at one activity and all of the general meanings pertaining to it. Using a correspondence analysis one can see to what extent different groups of people have different orientations of general meanings, taking all general meanings into account. This section tries to answer the research question: To what extent do different orientations of general meanings exist for different groups of people? Correspondence analyses give insight into the extent to which all general meanings are associated with one single predictor. As in Chapter four, we looked at groups of respondents subdivided by type of residential environment (Figure 5.1), age (Figure 5.2) and household composition (Figure 5.3).

When interpreting the association between general meanings and type of residential environment, it is important to keep in mind that the general meanings are related to certain activities. Thus, they do not stand on their own. The logistic regression models showed that type of residential environment is a significant predictor for some activities; for example, city centre dwellers are more likely to have mentioned going out, compared to people who live in a suburban or rural type of residential environment. So most of the associations of general meanings with type of residential environment can be explained by looking at the activity they are mostly related to. Because logistic regression analysis can only look at the effect of general meanings on activities univariately, the correspondence analyses do add relevant information.

Type of residential environment

Regardless of which type of residential environment people live in, all respondents mentioned certain general meanings an equal number of times: break from work, pleasure, convenience, relaxation and social contacts. These belong to value types that serve both the collective and individual interest. Apparently, the dwelling and residential environment are places where people can relax, forget about their work and enjoy life. These are all values that serve the individual interest. The general meaning social contacts indicates that regardless of where people live, they find it important to meet others in their dwelling or residential environment. This shows that dwelling is not only a private matter but also involves (meaningful) others. Finally, the general meaning convenience indicates that people also expect some level of functionality from their dwelling or residential environment. Convenience is mostly linked to cooking and daily errands. These are activities that need to be done on a regular basis; apparently it is important to people that the dwell-

ing and residential environment are functionally designed such that they provide some support for performing these activities in a comfortable and efficient manner.

City centres have many facilities for going out; city centre dwellers are more likely to go out than people who live in a suburban or rural type of residential environment. Getting away from things is a significant predictor for the activity going out, a relation found by Lindberg *et al.* (1987) too. The city centre offers a good type of residential environment for going out, being entertained and forgetting about one's day-to-day worries. The association with the general meaning space is not easy to interpret. Space is mostly linked to cooking, and city centre dwellers are more likely to have mentioned cooking. But there does not seem to be an obvious explanation for this relation. Indeed, people who live in a suburban or rural type of residential environment also find space important for cooking. Conceivably, since dwellings are somewhat smaller in city centres, people living there might be more focussed on space. However, this cannot be derived directly from the available data. Finally, the general meaning saving time is associated with city centre dwellers. The high level of facilities in city centres makes it possible for people to combine many different activities (Karsten *et al.*, 2006). So one might argue that people who have a tight time-space budget find it important to save time. By saving time, people can combine many different activities, for example, work, child care and keeping in touch with friends. Through its wide range of facilities, the city centre provides opportunities to combine all these many different activities (Van Diepen and Arnoldus, 2003).

The association of the general meanings nature and necessity with a suburban type of residential environment is not easy to interpret. One reason for people to move out of cities is the lack of green space. One might expect that people who value nature highly would prefer to live in a suburban or rural type of residential environment. The general meaning necessity is mostly linked to gardening. It is striking that none of the city centre dwellers mentioned gardening as a necessity. In contrast to city centre dwellers, a considerable share of people who live in a suburban type of residential environment experience gardening as a chore. Relatively few dwellings in a city centre type of residential environment have a garden. Yet in a suburban or rural type of residential environment, most dwellings do have a garden. A possible explanation might be that people who live in a city centre consciously choose to occupy a dwelling with a garden, whereas people in a suburban type of residential environment take the dwelling feature garden for granted. As a result, people might enjoy having a garden to sit and relax in, but clearly not all people who live in a suburban and rural type of residential environment also enjoy the maintenance of the garden.

People who live in a rural type of residential environment have mentioned the general meanings peace and quiet, keeping busy and safety more fre-

Table 5.27 Association of general meanings with type of residential environment

City centre	Suburban	Rural
Space	Nature	Peace and quiet
Getting away from things	Necessity	Keeping busy
Saving time		Safety
Average profile		
Break from work, pleasure, convenience, relaxation, social contacts		

quently than people who live in a city centre or suburban type of residential environment. These general meanings cover some of the aspects that Van Dam *et al.* (2002) describe as the rural idyll in the Netherlands. People associate rural types of residential environment as being quiet, green, spacious and safe (Van Dam *et al.*, 2002). These associations are also clearly present in this data. Keeping busy seems to fall outside this classification. Indirectly, we can relate this association to the image of rural types of residential environment. Keeping busy is a significant predictor for the activity gardening. People who live in a rural type of residential environment are more likely to have mentioned gardening. One might assume that a person who likes gardening would prefer to live in a green type of residential environment. Table 5.27 summarises the association of general meanings with type of residential environment.

Age

There is an overlap between the average profiles of the correspondence analysis, so we only treat them briefly here. Regardless of the respondents' age, they consider it important for their dwelling and residential environment to provide a place for them to relax and find peace and quiet, though it should also be a place to enjoy and be functional, providing convenience. But people also need to meet others and share things together.

The general meaning safety is associated with people aged 18-54. As we have seen above, safety is very important for people with young children. Most people with young children belong to this age group. Space is an important motivator for residential mobility; especially for young people who have only taken their first steps on the housing ladder, space is very important (Boumeester *et al.*, 2006; Feijten and Mulder, 2005). This could be motivated by the housing career, moving from a smaller dwelling to a larger one, which amounts to increasing their consumption of housing. But it might also be triggered by the family career, whereby young people expand their family and need more space for that (Clark and Dieleman, 1996).

People aged 40-54 are sometimes characterised as being in the rush hour of their lives (Arnold and Lang, 2007). For many people, both their family and their working career are in full swing. That implies that people will have many obligations both at work and at home. In order to meet all these obligations, people need a dwelling and residential environment that can support them in efficiently fulfilling their duties. This is reflected in the general meanings saving time, necessity and health. But they also need a place where they can leave these obligations behind, as reflected by the general meaning getting away from things. Personal development can be explained in two ways. It can

Table 5.28 Association of general meanings with age

18-39	40-54	55+
Safety	Safety	Keeping busy
Space	Saving time	Getting away from things
	Necessity	Personal development
	Health	
	Getting away from things	
	Personal development	
Average profile		
Pleasure, sharing things together, convenience, relaxation, peace and quiet		

be important for learning new things and being able to meet obligations better. But another explanation might be that it is a way to get away from the daily duties and learn new things for their own sake.

All of the general meanings associated with people over 55 are related to leisure activities. Keeping busy is related to gardening. Getting away from things and personal development are related to going out. One might assume that a large share of those over 55 are retired and have much free time. The findings suggest that people over 55 are very active. Table 5.28 summarises the association of general meanings with age.

Household composition

Regardless of what kind of household type people live in, the general meanings relaxation, health and getting away from things are important. As we have seen for type of residential environment and age, relaxation is important for people. They need a place to relax, be it in their dwelling or the residential environment. Besides, people have a need to get away from their daily duties. Health is mostly related to doing sports and recreation. Apparently these two activities are equally distributed over the types of households.

The total number of one-person households is low in this sample, which is why the position of this household type in the correspondence solution is rather isolated. It is therefore difficult to interpret the association.

The general meanings nature and keeping busy are most strongly associated with people who live in a two-person household. While a direct relation between household composition and these meanings is not easy to find, a more indirect link, through age, might offer an explanation for the association. Approximately 70 per cent of all people over 55 live in a two-person household. Quite a few people in this age group will already have taken (early) retirement and will consequently have relatively much free time. It seems that people over 55 are active in their free time. The general meanings nature and keeping busy are important for the activity recreation. (Recreation was mentioned most by people over 55.) People living in a two-person household seem to be outdoor-oriented. They go out to walk or cycle and like to work in their garden. Therefore, the general meanings nature and keeping busy are most strongly associated with people living in two-person households.

As we have already seen in the solution for type of residential environment and age, safety is important for families with young children. Therefore, it

Table 5.29 Association of general meanings with household composition

One person	Two person	Three or more persons
Break from work	Space	Break from work
	Nature	Safety
	Keeping busy	Space
Average profile		
Relaxation, health, getting away from things		

is evident that safety is related to three- or more person households. Space is associated with both two-person and three- or more person households. This might be explained in terms of household formation; people who want to start a family (two-person households) or expand it, or people who have children growing up (three- or more person households) might need extra space. In the literature, family expansion is an important reason for people to look for a larger dwelling (Clark and Dieleman, 1996). Table 5.29 summarises the association of general meanings with household composition.

Concluding, different groups of people have different orientations of general meanings. Besides differences, some general meanings are important to everyone, regardless of their type of residential environment, age or household composition. The general meaning relaxation seems to be important to everyone; it belongs to the average profile for all three correspondence analyses. In two solutions, pleasure is part of the average profile. This is probably due to the fact that relaxation and pleasure are general meanings with a high frequency; both are mentioned for many different activities and many times. One should keep in mind that the general meanings used in the correspondence analysis do not represent the complete range of all relevant meanings of dwelling; unique meanings could not be included. So the orientations of general meanings identified by the correspondence analysis give only a partial view of the possible meanings attached to dwelling.

5.6.3 The meaning of dwelling

The meta-networks do take all relations between activities and meanings into account. Figures 5.10 and 5.11 showed that general meanings of home are well represented (Deprés, 1991b). First, the dwelling is clearly a place for relationships with family and friends (value type benevolence); for example, eating together with family or friends is one of its important functions. All rooms except the study are used to be together with family or friends. Spending time together, talking over the school day with the children or just catching up with friends (whether it be on the internet, on the phone, or in the living room or the private outdoor space) are all activities that people do on a daily basis in their dwelling. Second, the dwelling is a place for leisure activities. Many people mentioned that they watch TV, read, and listen to music in their dwelling. Relaxation is the most frequently mentioned meaning for the dwelling, so it is a place where people can relax, find peace and quiet and forget about work (value type hedonism). Third, the dwelling is a refuge from the outside world and a place where people can do (to some extent) whatev-

er they want (value type self-direction and stimulation). This is related to the home as a centre of leisure activities; people don't need to justify to others what they do in their house. They can do what they want, forget about work, read what they find interesting etc.

The meta-networks of activities in the residential environment (Figures 5.14 and 5.15) showed that the residential environment is a functional space; one needs to do daily errands, go to work or bring children to school. Because one needs to carry out these activities, functional aspects like saving time, being close by (value type self-direction) and – especially for taking the children to school – having a safe route to travel (value type security) are important. At the same time, the residential environment is a place for leisure activities, varying from activities for keeping fit to meeting friends, relaxing or forgetting about work (resp. value types security, benevolence, hedonism and stimulation).

In the next chapter, we shall consider to what extent the meaning structures differ per type of residential environment.

6 Comparing the meaning of dwelling

In Chapter four, we concluded that everyday life seems to be more similar in city centre, suburban and rural types of residential environment than one might expect in light of much of the literature. It should be kept in mind that Chapter four was only concerned with differences in activities among the three types of residential environment. However, the literature also argues that values like excitement and stimulation (associated with city life) or finding peace and quiet (associated with rural living) contribute to the importance of and differentiation among the three types of residential environment. In this chapter, we try to show to what extent meaning structures – i.e., the relation between setting, activity and meaning – differ per type of residential environment. The following section presents the activities performed in the dwelling features and in the residential environment subdivided by the type of residential environment. Network analysis does not allow us to test for significant differences in meaning structures among the three types of residential environment. Therefore, we use a chi-square test instead to ascertain the extent to which activities (performed in a certain room) differ per type of residential environment. The meaning structures are then compared by looking at the most frequently mentioned links in the network and the normalised in- and out-degree centrality. Because the overall meaning structures have already been discussed in detail, this chapter focuses on differences in meaning structures among city centre, suburban and rural types of residential environment.

The following research question is addressed in this chapter:

8. To what extent do meaning structures differ per type of residential environment?

   This research question is divided into the following sub-questions:

   a) What are the most mentioned meanings for activities in the dwelling in a city centre, suburban and rural type of residential environment?
   b) What are most mentioned meanings for activities in the residential environment in a city centre, suburban and rural type of residential environment?

6.1 Subdivided meaning structures of activities in the dwelling

This section presents the meaning structures of activities in the living room, kitchen, study and private outdoor space. Each meaning structure is subdivided by type of residential environment. This section ends with meta-analyses of the most mentioned meanings for all activities in the dwelling. These networks can show in what way the meaning of activities in the dwelling differ between the three types of residential environment.

Table 6.1 Activities in the living room, subdivided by type of residential environment

Activity	City centre	Suburban	Rural	Total living room
Relaxing	128 (38%)	117 (38%)	104 (41%)	349 (39%)
Eating	63 (19%)	41 (13%)	32 (12%)	136 (15%)
Entertaining guests	57 (17%)	34 (11%)	21 (8%)	112 (12%)
Being at the computer	21 (6%)	39 (12%)	28 (1%)	88 (10%)
Children playing	14 (4%)	24 (8%)	26 (10%)	64 (7%)
Being together with the nuclear family	16 (5%)	24 (8%)	21 (8%)	61 (7%)
Hobby	21 (6%)	17 (6%)	15 (7%)	53 (6%)
Working at home	18 (5%)	9 (3%)	10 (4%)	37 (4%)
Total	**338 (100%)**	**305 (100%)**	**257 (100%)**	**900 (100%)**

Chi-square: p=0.002

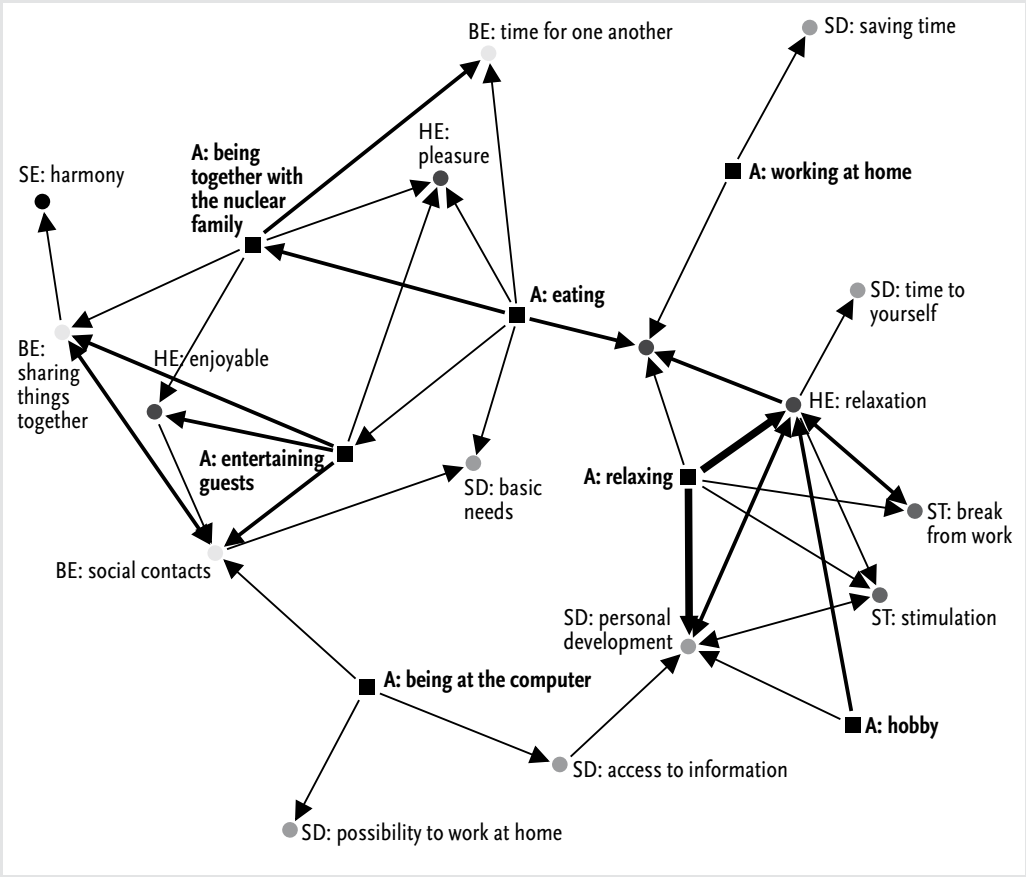
6.1.1 Living room

A chi-square test shows that activities in the living room differ significantly (p=0.002) across the three types of residential environment (see Table 6.1). City centre dwellers mentioned eating and entertaining guests in the living room more often than respondents living in either a suburban or rural type of residential environment. Respondents living in a suburban or rural type of residential environment mentioned being at the computer and children playing in the living room more often than city centre dwellers did. The most frequently mentioned activity in the living room is relaxing; this is the same for all three types of residential environments.

Even though activities in the living room differ significantly among the three types of residential environment, the overall differences in activities performed in the living room are not that large. For example, relaxation is the most frequently mentioned activity for all three types of residential environment. As a consequence, the meaning structures are also quite similar. Still, there are some differences among the three meaning structures for activities in the living room. First, the network representation of the meaning structure for activities in the living room in a city centre type of residential environment (Figure 6.1) has links from the activity working at home to both *saving time* and *peace and quiet*, links that do not occur in the other two networks. This does not imply that respondents who live in a suburban or rural type of residential environment do not use the living room as a place to work at home. This is shown by the link being at the computer, which creates the *possibility to work at home*. Still, the activity working at home and the meaning saving time are more prominent in the city centre network than in the two other networks.

Second, a unique link in the city centre network is the link between *sharing things together* and *harmony*. Since the link was only mentioned four times, it was not included in the overall network, which has a cut-off level >10. However, this link is unique to activities in the living room in a city centre type of residential environment. Because the link occurred only four times, no conclusions can be drawn. Yet this link might also occur in other meaning structures in the city centre. We can judge this possibility better after discussing all meaning structures.

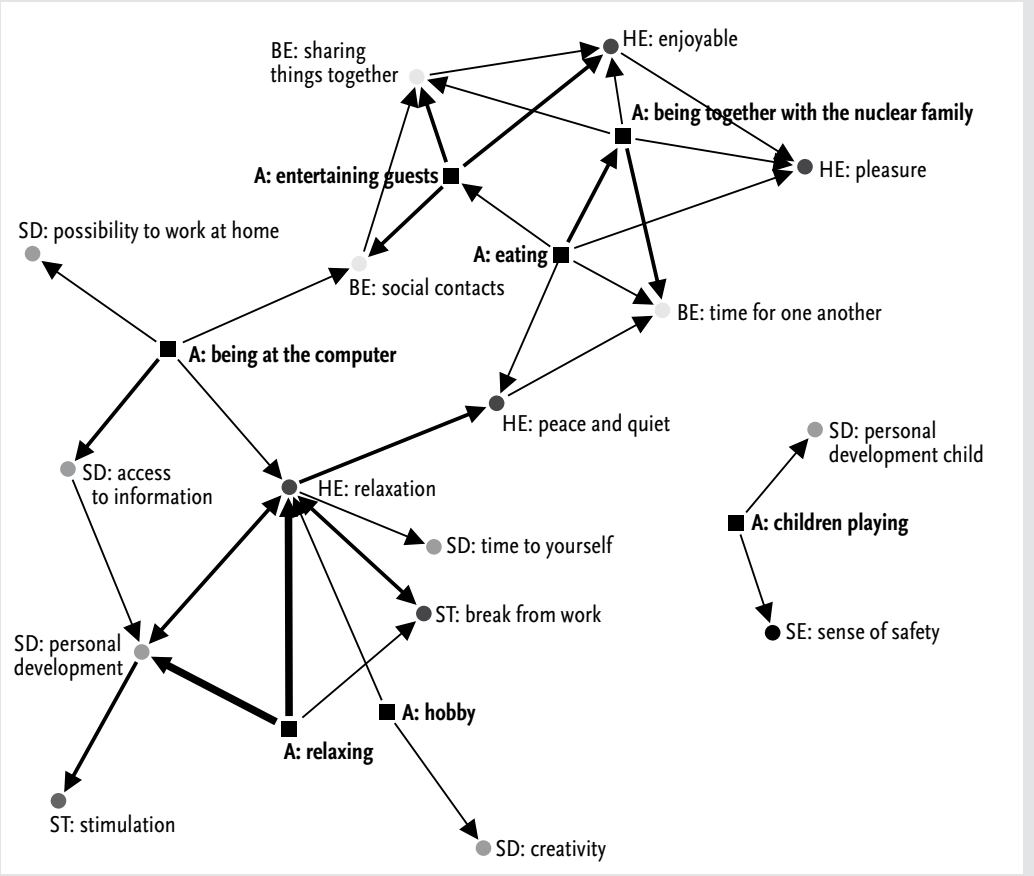
Figure 6.1 Network representation of the meaning structure for the living room in the city centre (cut-off level >4)



Third, the city centre network contains a link between the activity eating and basic need (n=6) and a link between *social contacts* and *basic need* (n=4). Again, this link is not present in the other two networks nor in the overall network of activities in the living room. Basic need is mentioned most by city centre dwellers and can be considered a unique meaning for activities in the living room in a city centre type of residential environment. The meaning basic need refers to things one can't do without – you just need them. But there does not seem to be an obvious explanation why city centre dwellers mentioned the meaning basic need more than the other two groups.

Fourth, in the suburban network there is a unique link between the activ-

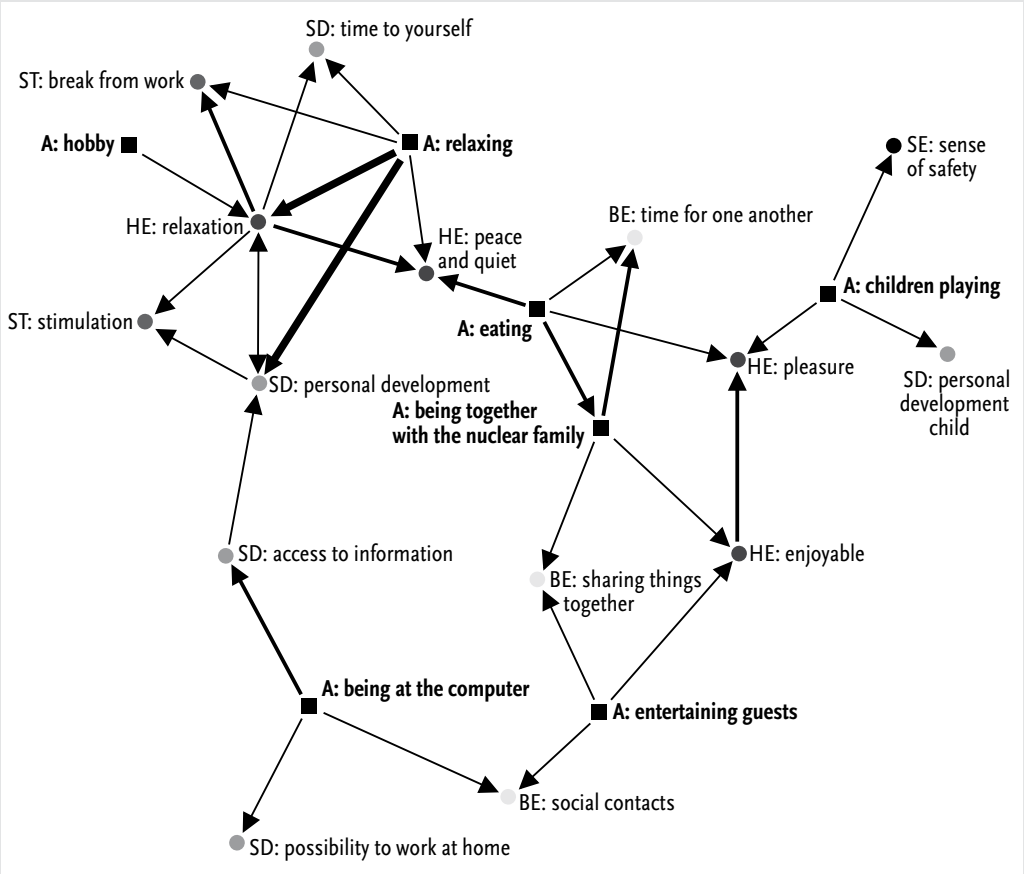
Figure 6.2 Network representation of the meaning structure for the living room in the suburb (cut-off level >4)



ity hobby and *creativity* (n=4). This link is not present in the overall network of activities in the living room either. This is probably caused by the difference in cut-off level. Whether creativity is really an important meaning for respondents living in a suburban type of residential environment can only be judged after discussing all meaning structures.

The last difference is related to the activity children playing. This activity is not present in the network of activities in a city centre type of residential environment. Accordingly, the function of the living room as a *safe place where children can play and learn* is not present in the city centre. In the suburban network (Figure 6.2), a separate branch is formed by the living room as a

Figure 6.3 Network representation of the meaning structure for the living room in rural areas (cut-off level >4)



safe place where children can play and learn. In the rural type of residential environment (Figure 6.3) it is connected through the meaning *pleasure* to the rest of the network. One explanation for these different levels of occurrence might lie in the number of times the activity children playing has been mentioned. This is highest in a rural type of residential environment. Therefore, compared to the other two networks, it has more links originating from that point. In a city centre type of residential environment, the activity children playing was mentioned the fewest times. As a consequence, few points originate from that activity.

Summarising, as Table 6.2 shows, the three networks are rather similar. In

Table 6.2 Key features of the meaning structure for the living room

	City centre >4	Suburb >4	Rural >4
Most mentioned links	A: Relaxing – relaxation (n=57) A: Relaxing – personal development (n=43) A: Entertaining guests – social contact (n=21)	A: Relaxing – relaxation (n=54) A: Relaxing – personal development (n=43) Personal development – don't know (n=22)	A: Relaxing – relaxation (n=52) A: Relaxing – personal development (n=31) Personal development – don't know (n=13)
Most mentioned meaning (m1)	Relaxation Personal development Social contacts	Relaxation Personal development Enjoyable	Relaxation Personal development Peace and quiet
Most mentioned meaning (m2)	Personal development Relaxation Break from work	Break from work Personal development Relaxation	Personal development Peace and quiet Stimulating Break from work
Activity connected to most diverse meanings (m1)	A: Eating is connected to 6 different meanings (m1)	A: Eating is connected to 5 different meanings (m1)	A: Relaxing is connected to 5 different meanings (m1)
Influential meaning	Relaxation is connected to 5 different meanings (m2)	Relaxation is connected to 4 different meanings (m2)	Relaxation is connected to 6 different meanings (m2)

each type of residential environment there is a division between individual activities and meanings (for example relaxing, personal development, break from work) and collective activities and meanings (for example being together with the nuclear family, sharing things together, enjoyable). The meaning structures differ in that the city centre network places more emphasis on the activity working at home which is connected to the meaning saving time. The city centre network also contains two unique meanings, harmony and basic need. However, these meanings have a low frequency. Before concluding that these meanings are more important in the city centre than in the other two types of residential environment, though, we first have to analyse the other meaning structures. The suburban network has a unique link from hobby to creativity. Again, the frequency is quite low, so other networks need to be analysed before drawing any conclusions. Finally, the rural network is more family-focused. This shows up most clearly in the activity children playing, which is an integral part of the network. Through the meaning pleasure, the activity children playing is also indirectly connected to the activities eating, entertaining guests and being together with the nuclear family. All these activities are related to each other in the rural network and fulfil similar needs. This difference in meaning structure is probably not caused by type of residential environment but rather by the distribution of household composition over the three types of residential environment. Most families with children live in a rural type of residential environment.

6.1.2 Kitchen

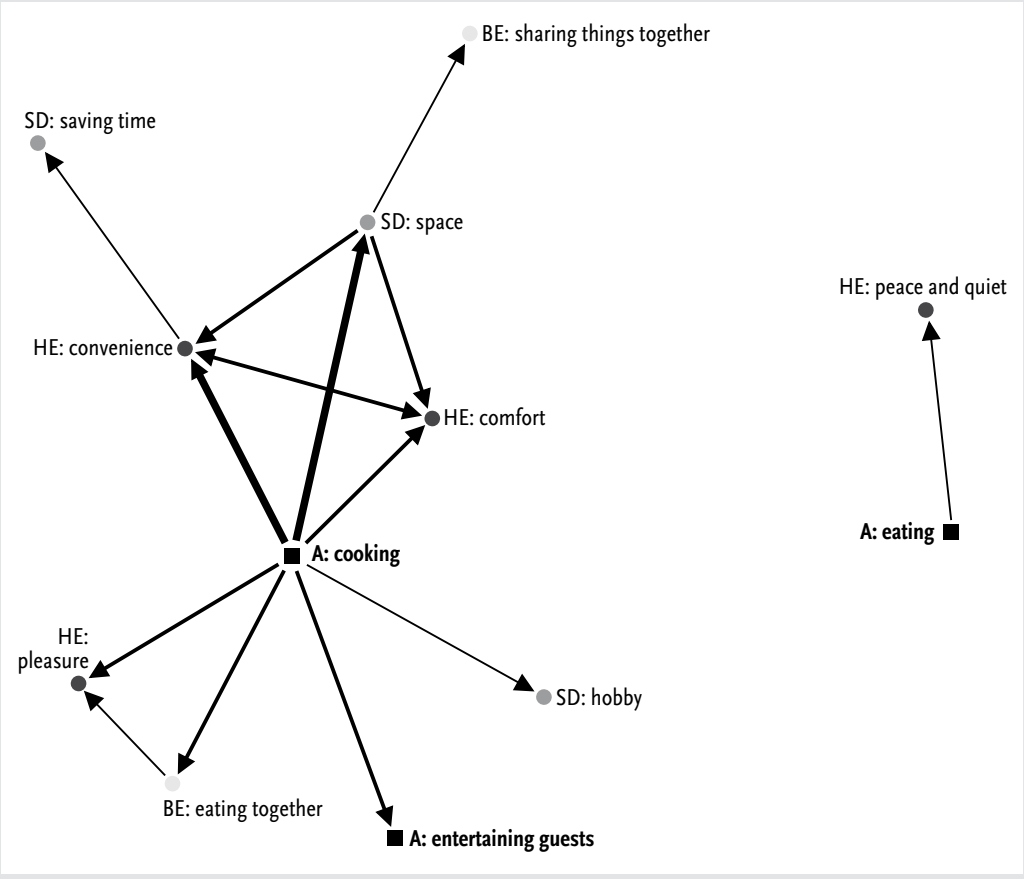
The activity mentioned most often for the kitchen is, not surprisingly, cooking (see Table 6.3). All people who mentioned cooking perform this activity in the

Table 6.3 Activities in the kitchen, subdivided by type of residential environment

Activities in the kitchen	City		Suburban		Rural		Total	
Cooking	151	(86%)	105	(82%)	115	(67%)	371	(78%)
Eating	12	(7%)	14	(11%)	35	(20%)	61	(13%)
Being together with the nuclear family	5	(3%)	2	(2%)	6	(3%)	13	(3%)
Relaxing	2	(1%)	4	(3%)	5	(3%)	11	(2%)
Children playing	1	(1%)	0		6	(3%)	7	(1%)
Entertaining guests	3	(2%)	3	(2%)	1	(1%)	7	(1%)
Hobby	1	(1%)	0		4	(2%)	5	(1%)
Total	**175**	**(100%)**	**128**	**(100%)**	**172**	**(100%)**	**475**	**(100%)**

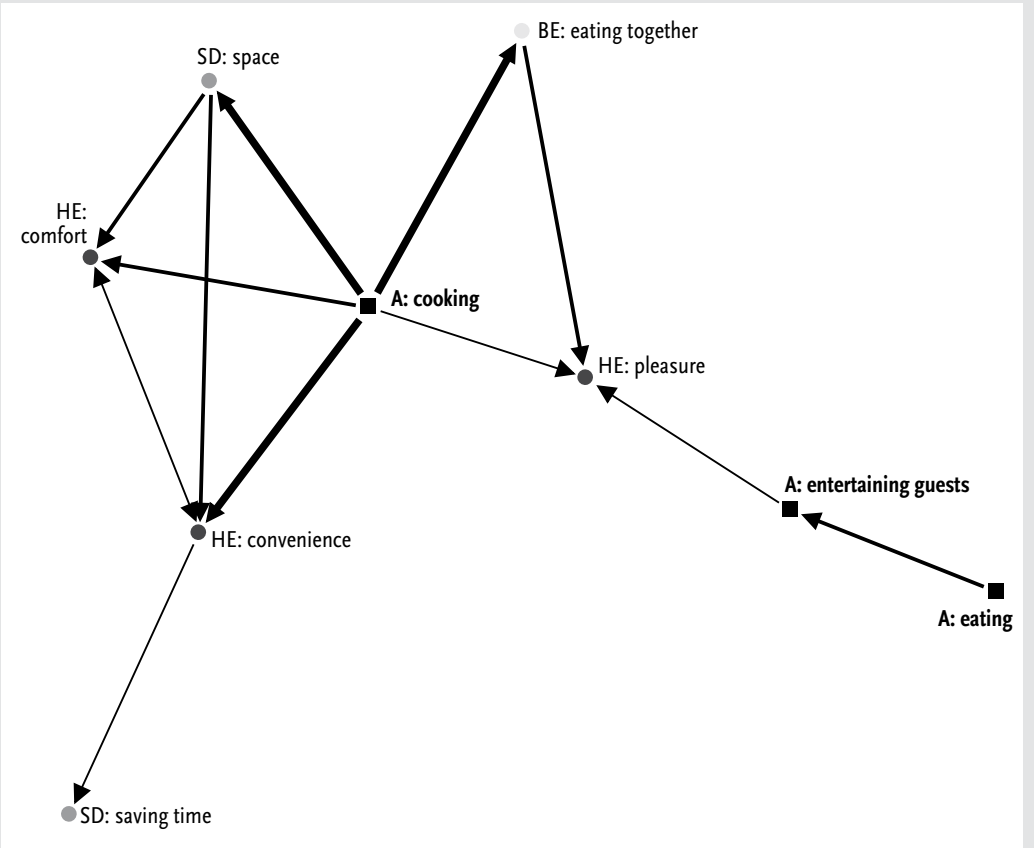
Chi-square: p=0.001 (over 20% of the cells have an expected value less than 5)
Chi-square cooking and eating: p=0.000

Figure 6.4 Network representation of the meaning structure kitchen in the city centre (cut-off level >4)



kitchen. After cooking, the activity mentioned most often is eating. All other activities were only mentioned a few times and can thus be regarded as idio-

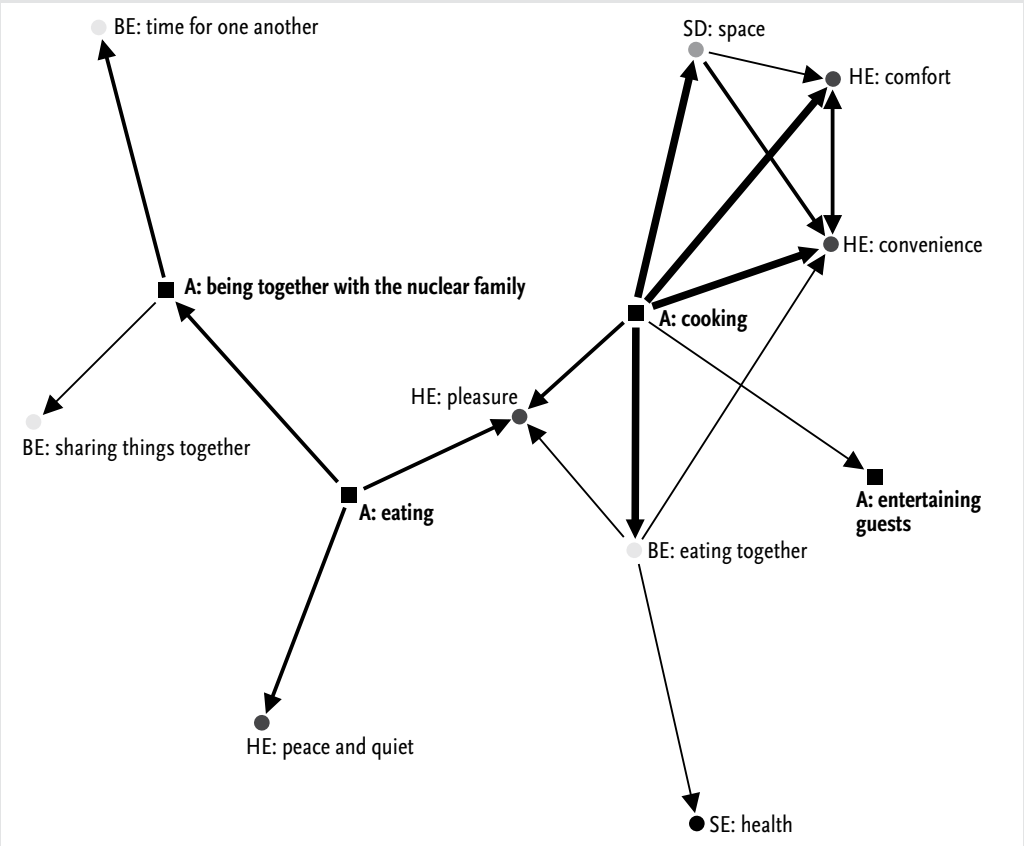
Figure 6.5 Network representation of the meaning structure kitchen in the suburb (cut-off level >4)



syncratic. Respondents living in a rural type of residential environment mentioned eating in the kitchen more often than city centre dwellers and people living in a suburban type of residential environment.

As we have already seen in the network of activities in the living room, city centre dwellers eat more often in the living room. In contrast, people who live in a rural type of residential environment eat more often in the kitchen. This also shows up in the network of activities in the kitchen. In the city centre network (see Figure 6.4), the link between the activity eating that allows people to come to rest (*peace and quiet*) is separated from the rest of the network. So cooking and eating seem to have different meanings. However, there is a direct link from cooking to *eating together*. This branch is separate because most city centre dwellers eat in the living room. In the suburban and rural

Figure 6.6 Network representation of the meaning structure kitchen in rural areas (cut-off level >4)



networks, eating is connected to the rest of the network through the meaning *pleasure*, as it is in the overall network. In all three networks, the link between the activity cooking and *space, convenience and comfort* is dominant. Especially the link between cooking and space appears many times in all three networks. The city centre network has two unique links. First, the link between the activity cooking and *hobby* (n=7) is not present in the suburban (see Figure 6.5) or rural network (see Figure 6.6). So it seems that cooking as a leisure activity occurs most in a city centre type of residential environment. Second, the city centre network has a link between space and *sharing things together*. This might indicate the social dimension of space; a spacious kitchen allows people to entertain guests there. However, this link is not direct, because the meanings eating together and being together with friends are not directly

Table 6.4 Key features of the meaning structure kitchen

Kitchen	City centre >4	Suburb >4	Rural >4
Most mentioned link	A: Cooking – space (n=42) A: Cooking – convenience (n=27) A: Cooking – eating together (n=20)	A: Cooking – space (n=27) A: Cooking – convenience (n=24) A: Cooking – eating together (n=19)	A: Cooking – space (n=29) A: Cooking – eating together (n=25) A: Cooking – comfort (n=19)
Most mentioned meaning (m1)	Space Convenience Eating together	Space Convenience Eating together	Space Eating together Comfort
Most mentioned meaning (m2)	Comfort Convenience Pleasure	Comfort Convenience Pleasure	Convenience Comfort Time for one another
Activity connected to most diverse meanings (m1)	A: Cooking is connected to 7 different meanings (m1)	A: Cooking is connected to 5 different meanings (m1)	A: Cooking is connected to 6 different meanings (m1)
Influential meaning	Space is connected to 3 different meanings (m2)	Convenience and space are connected to 2 different meanings (m2)	Eating together is connected to 3 different meanings (m2)

related to space.

The rural network also has two unique links. First, being together with the nuclear family is connected to *time for one another*. This link was mentioned eight times in total, of which six times in a rural type of residential environment. The social dimension of eating together with the nuclear family seems to be most common in a rural type of residential environment. Second, eating together is linked to *health*. People feel that sharing a meal with others contributes positively to their health. This link appears four times in the rural meaning structure, three times in the suburban meaning structure and twice in the city centre meaning structure. This link only arises in the rural network because of the choice of a cut-off level. To see whether health is more important for respondents living in a rural type of residential environment, the other meaning structures need to be taken into account too. Finally, the link between *convenience* and *saving time* is present in the overall, city centre and suburban network but lacking in the rural network. This might indicate that people living in a rural type of residential environment are less focused on saving time. However, this will become clearer by analysing the other networks where saving time has been mentioned. Until now, we have seen that in the network of the living room in the city centre, working at home is a way for people to save time.

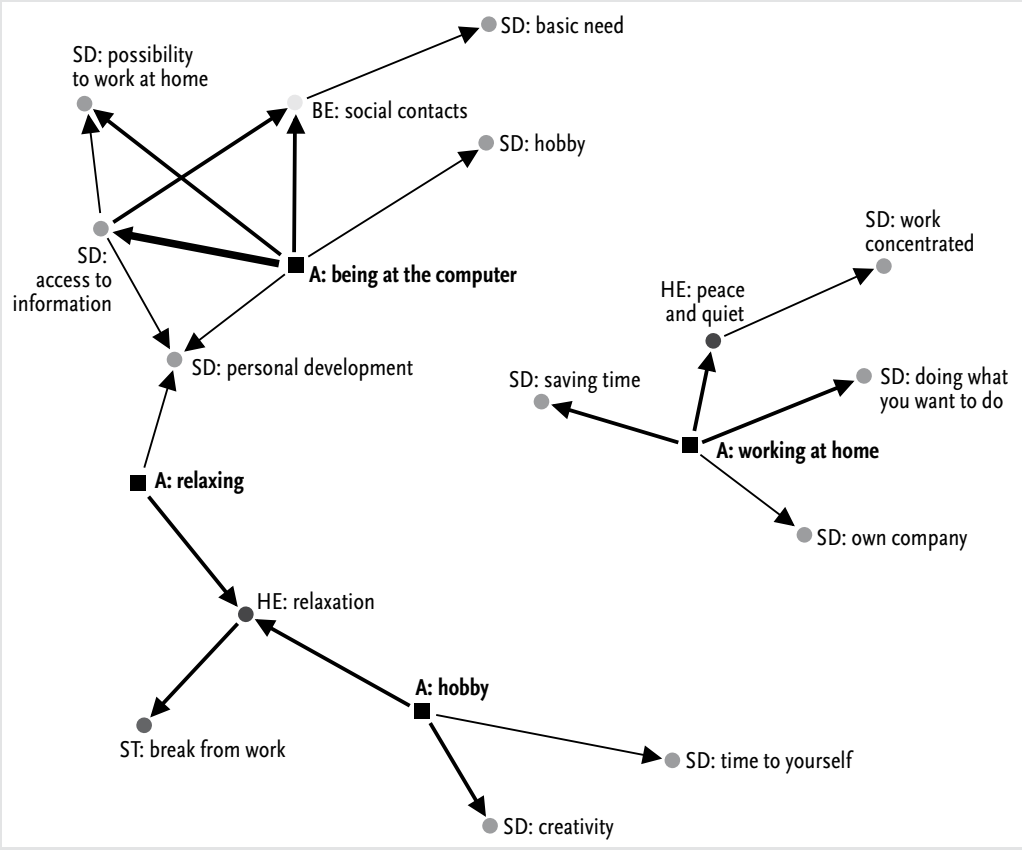
As Table 6.4 shows, the activity cooking dominates the meaning structure of the kitchen in all three networks. The meanings *space, convenience* and *comfort* are very important in all three networks. Besides this functional aspect, there is also a social dimension; people also eat with friends in the kitchen. These are the two main functions of the kitchen. As such, we can say that the kitchen is a rather mono-functional sub-setting of the dwelling. The rural network stands out because, besides the functional and social dimension, there is also a clear family dimension. The kitchen is a place where people eat together with their family members and have *time for one another*.

Table 6.5 Activities in the study, subdivided by type of residential environment

Activities in the study	City	Suburban	Rural	Total
Being at the computer	49 (38%)	24 (46%)	32 (52%)	105 (44%)
Work at home	43 (34%)	12 (23%)	17 (28%)	72 (30%)
Hobby	23 (18%)	14 (27%)	8 (13%)	45 (19%)
Relaxing	12 (9%)	1 (2%)	3 (5%)	16 (7%)
Entertaining guests	1 (1%)	1 (2%)	1 (2%)	3 (1%)
Total	**128 (100%)**	**52 (100%)**	**61 (100%)**	**241 (100%)**

Chi-square p=0.129

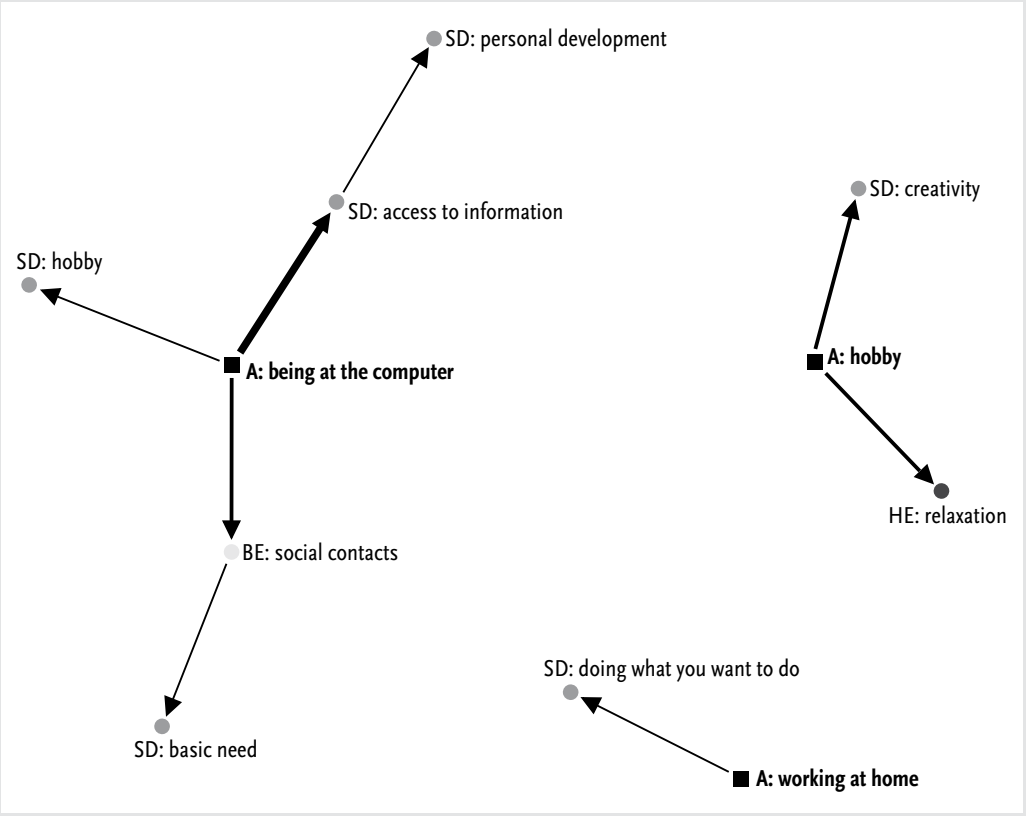
Figure 6.7 Network representation of the meaning structure study in the city centre (cut-off level >3)



6.1.3 Study

City centre dwellers assigned the most activities to the study (see Table 6.5). The chi-square test shows that there is no significant difference in activities in the study among the three types of residential environment (excluding entertaining guests, for low frequency). City centre dwellers mainly use the study for the computer and to work at home. In both suburban and rural

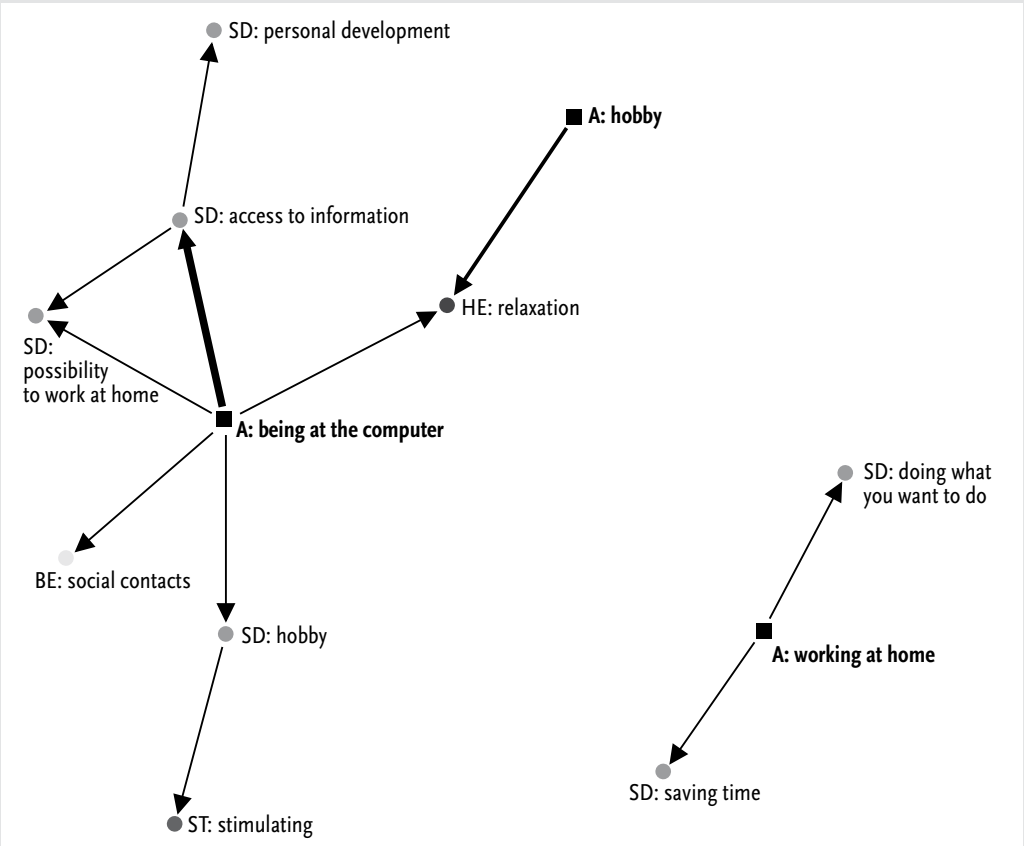
Figure 6.8 Network representation of the meaning structure study in the suburb (cut-off level >3)



types of residential environment, people mainly use the study for being at the computer. In the suburbs, hobby is mentioned relatively often. While relaxing was not mentioned many times, this activity was most prevalent in the city centre. The activity entertaining guests was rarely mentioned in any of the three types of residential environment and may thus be regarded as an idiosyncratic answer. In total, approximately twice as many activities have been assigned to the study in the city centre, compared to a suburban or rural type of residential environment.

The three networks of activities in the study are rather fragmented. The activity working at home occupies a separate position in all three networks. This indicates that one either does use the study to work at home or does not. The meanings attached to the activity working at home are unique; they are not connected to any other activity. The city centre (see Figure 6.7) and

Figure 6.9 Network representation of the meaning structure study in rural areas (cut-off level >3)



rural (see Figure 6.9) networks both consist of two parts, the suburban network (see Figure 6.8) even of three. The activity working at home in the study was mentioned most in a city centre type of residential environment. This network is the most extended one. It contains exactly the same links as the overall network. Furthermore, the meanings connected with leisure activities are very similar to those in the overall network. The city centre network contains one unique link: the activity hobby is linked to the meaning *time to yourself*. This link was mentioned only three times, but each time by a person who lives in a city centre type of residential environment. This might indicate that self-direction is an important value type for city centre dwellers. Before we can conclude this, though, we need to compare the other meaning structures. The rural network also contains one unique link: the meaning hobby is con-

Table 6.6 Key features of the meaning structure for the study

Study	City >3	Suburb >3	Rural >3
Most mentioned link	A: Being at the computer – access to information (n=18) A: Being at the computer- possibility to work at home (n=9) A: Hobby – creativity (n=8) A: Being at the computer – social contacts (n=8)	A: Being at the computer – access to information (n=10) A: Hobby – creativity (n=6) A: Being at the computer – social contacts (n=6)	A: Being at the computer – access to information (n=14) A: Hobby – relaxation (n=5) A: Being at the computer – hobby (n=4)
Most mentioned meaning (m1)	Access to information Relaxation Possibility to work at home	Access to information Creativity Social contacts	Access to information Relaxation Hobby
Most mentioned meaning (m2)	Social contacts Break from work Personal development	Personal development Basic need	Possibility to work at home Personal development
Activity connected to most diverse meanings (m1)	A: Being at the computer is connected to 5 different meanings (m1)	A: Being at the computer is connected to 3 different meanings (m1)	A: Being at the computer is connected to 5 different meanings (m1)
Influential meaning	Access to information is connected to 3 different meanings (m2)	Social contacts and access to information are connected to 1 meaning (m2)	Access to information is connected to 2 different meanings (m2)

nected to *stimulation*. Again, this link was only mentioned three times, but in each instance by a person living in a rural type of residential environment. We need to compare the other networks before we can conclude whether stimulation is an important value type for people living in a rural type of residential environment.

Summarising (see Table 6.6), the fragmented shape of the meaning structure for the study shows a clear division between leisure activities (being at the computer, hobby and relaxation) and use of the room for work purposes (working at home). City centre dwellers assign most activities to the study. These are related to both work and leisure. However, the function of the study as a place to work at home, affording various meanings such as *saving time, having your own company, doing what you want* and *working concentratedly*, is most common in the city centre. In contrast, the emphasis of the study in the suburban network seems to lie on leisure. The computer is used to *keep in touch with friends* and *have access to information* to learn new things (*personal development*). The rural network seems to take an in-between position; the study is used both for work and leisure.

6.1.4 Private outdoor space

The activities performed in the private outdoor space differ significantly per type of residential environment (see Table 6.9). This might be explained by the fact that the majority of residents living in a suburban or rural type of residential environment already do or would prefer to have a garden (resp. 81%

Table 6.7 Garden and balcony per type of residential environment

	Garden	Balcony	No preference	Total
City centre	106	106	19	231 (4 missing)
Suburban	164	25	13	202
Rural	202	15	5	222
Total	**472**	**146**	**37**	**655**

Table 6.8 Activities in the balcony and garden for a city centre type of residential environment

Activity	Garden (n=106)	Balcony (n=106)	Total (n=212)
Gardening	33	11	44
Being outside	28	15	43
Entertaining guests	9	8	17
Children playing	4	0	4
Relaxing	5	6	11
Hobby	1	0	1
Being together with the nuclear family	0	0	0
Eating	1	1	2
Total	**81**	**41**	**122**

Chi-square (gardening – relaxing): p=0.181

and 91%). Among city centre dwellers, there are just as many respondents who would prefer or already have a garden as who would prefer or do have a balcony (resp. 46% and 46%) (see Table 6.7). One might argue that the use and meanings of a balcony differ from those of a garden. That is why we first see to what extent activities assigned to either a balcony or garden differ. Because the great majority of people living in either a suburban or a rural type of residential environment do have a garden, we do not make a distinction between those with a garden and those with a balcony. That is, we take both groups together.

There is no significant difference in activities between the garden and balcony for city centre dwellers. However, it seems that more activities are performed in a garden than on a balcony. Almost twice as many activities were assigned to the garden as to the balcony. The data presented in Table 6.8 clearly depict the interrelation between features and activities. For example, the activity gardening has been assigned to the garden as well as to the balcony. So both a garden and a balcony afford gardening. Yet while the number of respondents was the same for both of these outdoor amenities, people who have or prefer to have a garden mentioned gardening three times more often than people who have or prefer to have a balcony. Therefore we can conclude that the features of a garden more adequately afford the activity gardening than the features of a balcony. Because there are no significant differences in activities assigned to the garden and balcony, we do not break down the

Table 6.9 Activities in the private outdoor space, subdivided by type of residential environment

Activities in the private outdoor space	City centre (n=231)	Suburban (n=202)	Rural (n=222)	Total (n=655)
Gardening	49 (37%)	95 (56%)	117 (54%)	261 (50%)
Being outside	46 (34%)	47 (28%)	53 (24%)	146 (28%)
Entertaining guests	18 (14%)	10 (6%)	8 (4%)	36 (7%)
Children playing	5 (4%)	9 (5%)	19 (9%)	33 (6%)
Relaxing	11 (8%)	1 (1%)	5 (2%)	17 (3%)
Hobby	1 (1%)	3 (2%)	8 (4%)	12 (2%)
Being with the nuclear family	0	4 (2%)	3 (1%)	7 (1%)
Eating	2 (1%)	1 (1%)	4 (2%)	7 (1%)
Total	**132 (100%)**	**170 (100%)**	**217 (100%)**	**519 (100%)**

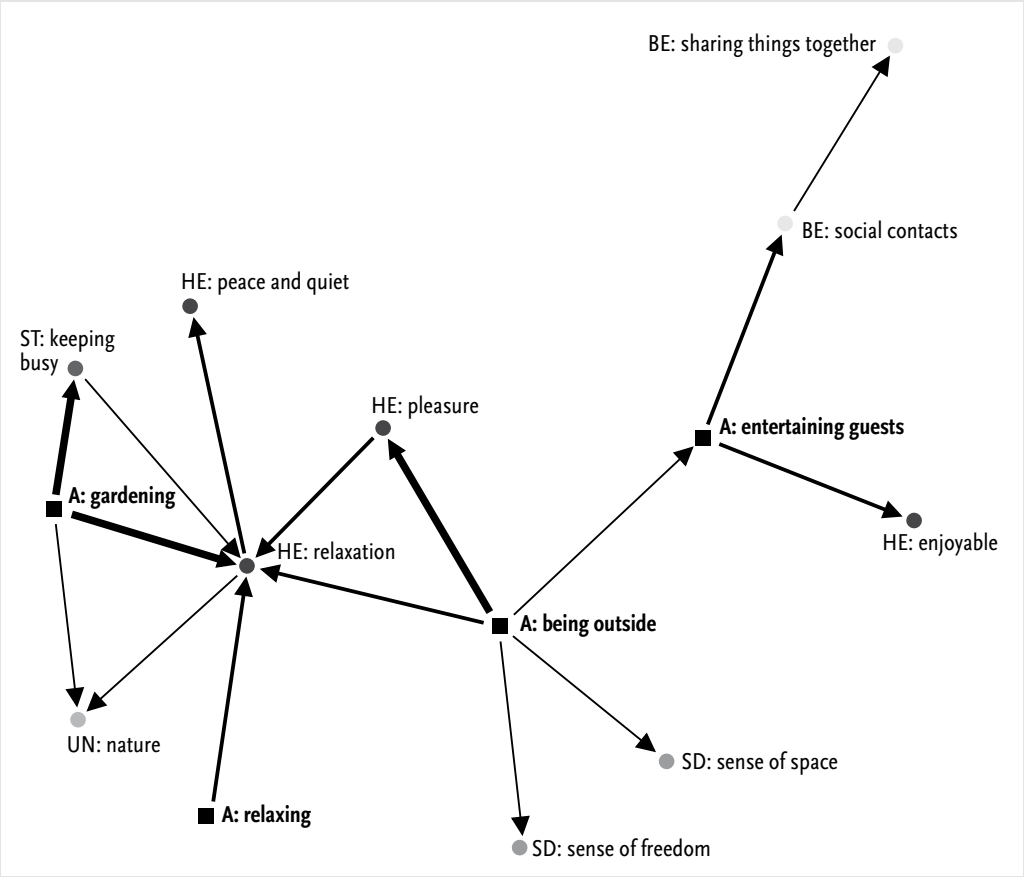
Chi-square: p=0.000 (over 20% of the cells have an expected value less than 5)
Chi-square (gardening – relaxing): p=0.000

meaning structure for the private outdoor space by garden and balcony.

Even though gardening, being outside and entertaining guests are the most mentioned activities in all three types of residential environment, the use of the private outdoor space differs significantly (see Table 6.9). Being outside and entertaining guests have been mentioned relatively most by city centre dwellers, whereas gardening has been mentioned relatively most by suburbanites and people living in rural areas. Furthermore, people living in a rural type of residential environment also use their private outdoor space as a place for children to play. Relaxing in the garden or on the balcony was mainly mentioned by city centre dwellers, and hobby was mainly mentioned by people living in a rural type of residential environment. One might expect gardens in the city centre to be smaller than those in the suburbs. And suburban gardens will generally be smaller than those in rural areas. Following this line of reasoning, it seems that the size of the private outdoor space influences the total number of activities mentioned by the respondents. The total number of activities is lowest in the city centre and highest in rural areas. This is also supported by the subdivision of activities performed in the garden and balcony in city centres. The number of respondents who have a garden is exactly the same as those who have a balcony. But the same number of respondents assigned twice as many activities to the garden as to the balcony. Assuming that a garden is larger than a balcony, this also might support the claim that people in rural types of residential environment generally have a larger garden, which affords more (space-consuming) activities (Heins, 2002).

The city centre network (see Figure 6.10) contains some unique links. The activity being outside affords a *sense of space* and *a sense of freedom*; these links are not present in the suburban (see Figure 6.11) or rural (see Figure 6.12) network. A possible explanation might be that in a city centre, there is generally little green space, so the private outdoor space of city centre dwellers contributes most to their need for a sense of space and sense of freedom. One might expect that respondents living in either a suburban or a rural residential environment will have more (green) space in their surroundings. So their need for

Figure 6.10 Network representation of the meaning structure private outdoor space in the city centre (cut-off level >4)

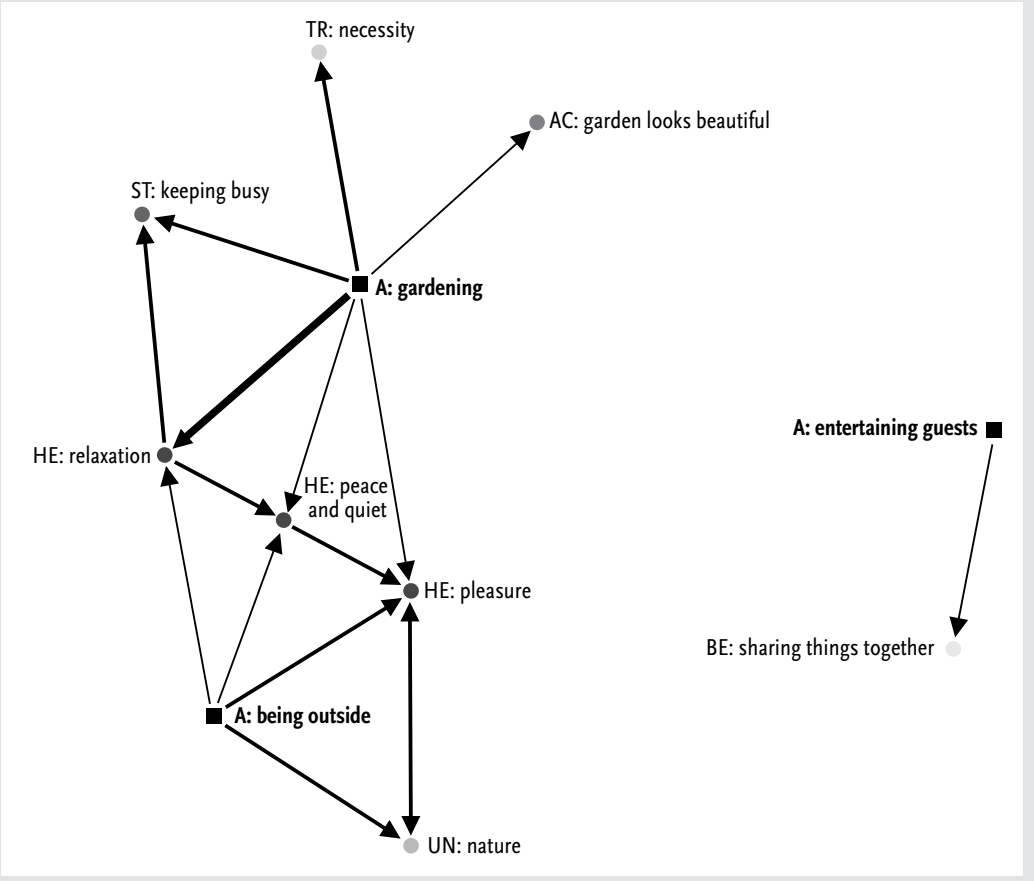


a sense of space and freedom is also afforded by the (green) space in their residential environment. Also the function of the garden as a place to entertain guests connected to *social contacts* and *enjoyable* is more important in a city centre than in a suburban or rural residential environment.

The rural network stands out by the function of the garden as a safe place where children can learn and play. This difference is probably caused by household composition rather than by type of residential environment, given that many families with children live in a rural area.

Finally, we see that the link between the activity gardening and *necessity* is only present in the network in a suburban or rural type of residential environ-

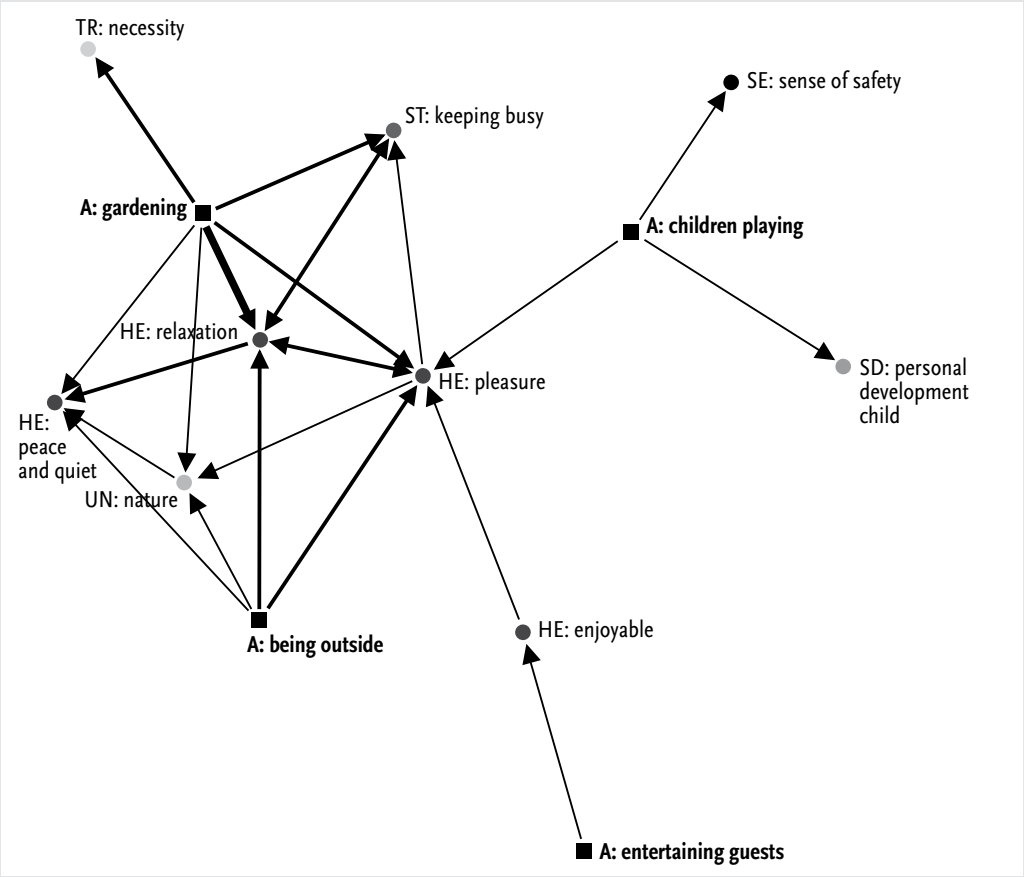
Figure 6.11 Network representation of the meaning structure private outdoor space in the suburb (cut-off level >4)



ment. In contrast, none of the city centre dwellers see gardening as a necessity. One might argue that few dwellings in a city centre have a garden, whereas in suburban and rural areas most dwellings do have one. A possible explanation might be that city centre dwellers make a deliberate choice to live in a dwelling with a garden. Obviously there are other reasons besides having gardening as a hobby to choose a dwelling with a garden. Still, one might expect city centre dwellers who like gardening to make an effort to find a dwelling with a garden, whereas people living in a suburban or rural type of residential environment may be expected to take a garden for granted.

Summarising (see Table 6.10), in all three types of residential environments

Figure 6.12 Network representation of the meaning structure private outdoor space in rural areas (cut-off level >4)



the private outdoor space is a place to *relax*. This is afforded by the activities being outside and gardening. Gardening also affords *keeping busy*. Besides this leisure function, the garden also has a social function; people use the private outdoor space for entertaining guests, catching up with friends (*social contacts*) and enjoying their company (*enjoyable*). This social function is most developed in a city centre type of residential environment. Furthermore, the city centre network contains a unique link: being outside affords a *sense of space* and a *sense of freedom*. These links are not present in the suburban and rural networks. Only for people who live in a suburban or rural type of residential environment, gardening can be besides a hobby, also be experienced as a chore

Table 6.10 Key features of the meaning structure for private outdoor space

Private outdoor space	City centre >4	Suburb >4	Rural >4
Most mentioned link	A: Gardening – relaxation (n=18) A: Being outside – pleasure (n=14) A: Gardening – keeping busy (n=12) A: Being outside – relaxation (n=12)	A: Gardening – relaxation (n=37) A: Being outside – nature (n=13) A: Being outside – pleasure (n=13) Necessity – don't know (n=12)	A: Gardening – relaxation (n=48) A: Gardening – keeping busy (n=17) Relaxation – peace and quite (n=17)
Most mentioned meaning (m1)	Relaxation Pleasure Keeping busy	Relaxation Pleasure Necessity	Relaxation Pleasure Keeping busy
Most mentioned meaning (m2)	Peace and quiet Relaxation	Pleasure Peace and quiet Keeping busy	Pleasure Peace and quiet Keeping busy
Activity connected to most diverse meanings (m1)	A: Being outside is connected to 5 different meanings (m1)	A: Gardening is connected to 6 different meanings (m1)	A: Gardening is connected to 6 different meanings (m1)
Influential meaning	Relaxation is connected to 2 different meanings (m2)	Relaxation is connected to 3 different meanings (m2)	Relaxation and pleasure are connected to 3 different meanings (m2)

(*necessity*). Finally, in the rural type of residential environment, besides serving a leisure and social function, the garden also serves the function of providing a safe place for children (*sense of security*) to play and learn (*personal development of the child*). This function is not present in the city centre or suburban network for private outdoor space.

6.1.5 Other activities in the dwelling

The other activities in and around the dwelling are cleaning and maintenance of the dwelling. They do not differ significantly per type of residential environment (see Table 6.11).

Cleaning was mentioned most often by people who live in a rural type of residential environment. For all respondents who have mentioned cleaning, hygiene is important. It is the most influential meaning in all three meaning structures. Tidiness and pleasure are the most prestigious meanings. All links have a low frequency; therefore it is difficult to compare the three meaning structures. In a rural type of residential environment, hygiene is connected to health; this link does not exist in the two other meaning structures. Health was also a unique meaning in the meaning structure for activities performed in the kitchen in a rural type of residential environment (see Table 6.12).

The maintenance of the dwelling has a relatively low frequency. Regardless of whether a person lives in a city centre, suburban or rural type of residential environment, through maintenance of the dwelling people can adapt the dwelling according their own needs, which increases their residential satisfaction. People also seem to enjoy maintaining their dwelling; they see it as a nice way of keeping busy. Maintenance also has a financial benefit: through

Table 6.11 Other activities in and around the dwelling

	City centre n=235	Suburb n=202	Rural n=222	Total n=659
Cleaning	59	76	80	215
Maintenance of the dwelling	22	35	41	98
Total	**81**	**111**	**121**	**313**

Chi-square test: p=0.599

Table 6.12 Key features of the meaning structure for cleaning

Cleaning >3	City centre	Suburb	Rural
Most mentioned link	Tidy – pleasure (n=6) Hygiene – tidy (n=5) Obvious – tidy (n=4)	Hygiene – pleasure (n=8) Tidy – obvious (n=7) Hygiene – tidy (n=6)	Hygiene – health (n=8) Tidy – pleasure (n=5)
Nrm in-degree	Tidy (75)	Tidy (40) Pleasure (40)	Pleasure (60)
Nrm out-degree	Hygiene (75)	Hygiene (80)	Hygiene (80)

Table 6.13 Key features of the meaning structure for maintenance of the dwelling

Maintenance of the dwelling >2	City centre	Suburb	Rural
Most mentioned link	Increase residential satisfaction – adapt dwelling to own needs (n=3)	Adapt dwelling to own needs – increase residential satisfaction (n=5)	Adapt dwelling to own needs – increase residential satisfaction (n=7)
Nrm in-degree (prestigious)	Adapt dwelling to own needs (33) Pleasure (33)	Increase residential satisfaction (67)	Keeping busy (50)
Nrm out-degree (influential)	Keeping busy (33) Increase residential satisfaction (33)	Keeping busy (33) Increase residential satisfaction (33) Adapt dwelling to own needs (33)	Increase residential satisfaction (33) Adapt dwelling to own needs (33) Value of the dwelling (33)

maintenance the dwelling keeps its value (see Table 6.13).

Summarising, the meaning structures for the activities cleaning and maintenance of the dwelling do not seem to differ per type of residential environment.

6.1.6 Comparing the most mentioned meanings for activities in the dwelling

This subsection presents a meta-analysis of activities in the dwelling. In a meta-analysis, all activities in a certain setting are aggregated. In this way,

the meta-analysis shows in what way the different settings of the dwelling and meanings attached to activities in those settings are related. Because the meta-analyses are subdivided by type of residential environment, it is possible to show to what extent these relations differ per type of residential environment.

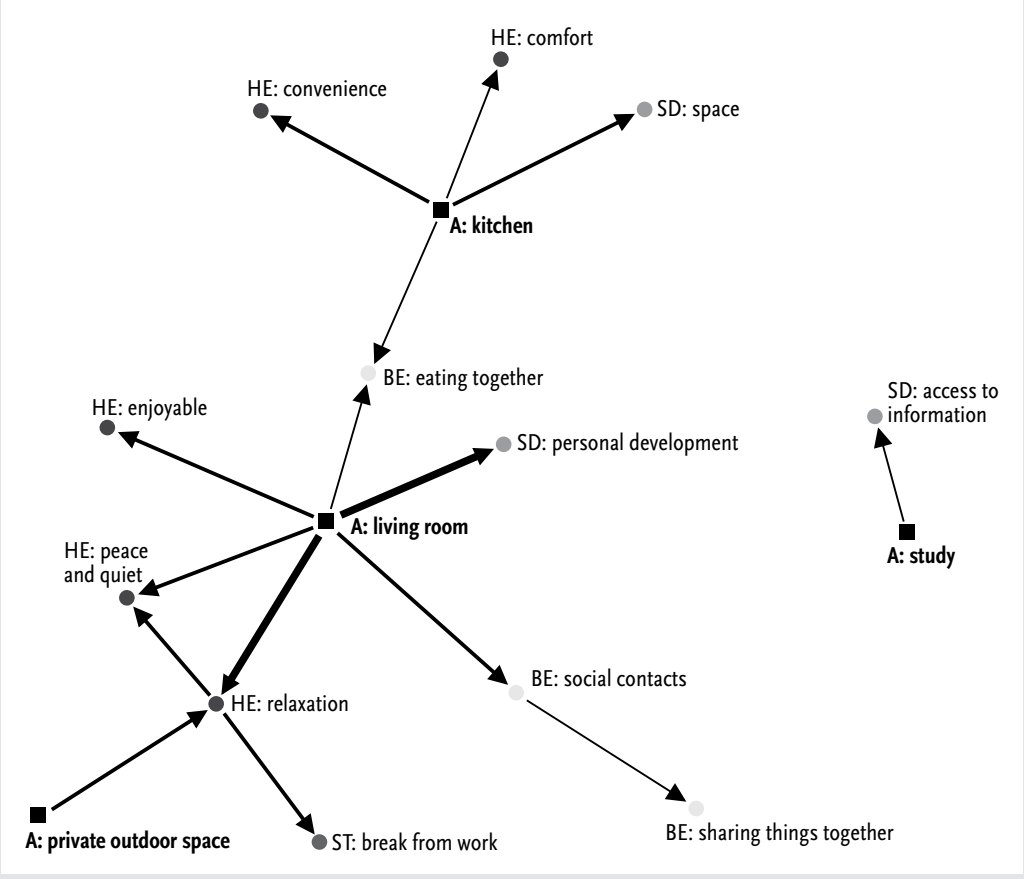
In the city centre (see Figure 6.13), the living room occupies a central position in the meaning structure of activities in the dwelling. The living room is connected to most different meanings, varying from the value type benevolence to that of hedonism, self-direction and stimulation. Within the city centre network, the study forms a separate, isolated part of the network. This can be interpreted as an indication that the study has a unique function; it does not share meanings with other rooms in the dwelling. In contrast, the kitchen and living room are connected to each other through the meaning eating together. Even though the kitchen and the living room have their own unique meanings, they also have this meaning in common. That implies that the meanings of the kitchen and living room are to some extent interchangeable and thus to some extent can substitute for each other. The dwelling as a place for social interaction is a relatively important function in a city centre type of residential environment. This is probably a result of the larger number of city centre dwellers who have mentioned entertaining guests, compared to people living in a suburban or rural type of residential environment. The private outdoor space is an isolate in the city centre network; it is connected to the rest of the network only through the meaning relaxation. So the private outdoor space in the city centre has a limited number of meanings that are interchangeable with those of other rooms in the dwelling[3].

In the suburban network (see Figure 6.14), the kitchen forms a separate branch. As in the other two networks, the most important functions of the kitchen are rather specific. The only difference is that in both the city centre and rural network, the kitchen also shares a meaning with other rooms. The private outdoor space and living room are connected to each other through the meaning relaxation.

Finally, in the rural network (see Figure 6.15), the private outdoor space is well connected to other rooms in the dwelling. The private outdoor space is connected to the kitchen through the meaning pleasure and to the living room through the meaning relaxation. Thus, the three main rooms (private outdoor space, kitchen and living room) in the rural network share many meanings. The network shows that in a rural type of residential environment, the private outdoor space is an important and integral part of the dwelling. It is striking that, in contrast to the city centre network, the living room in the

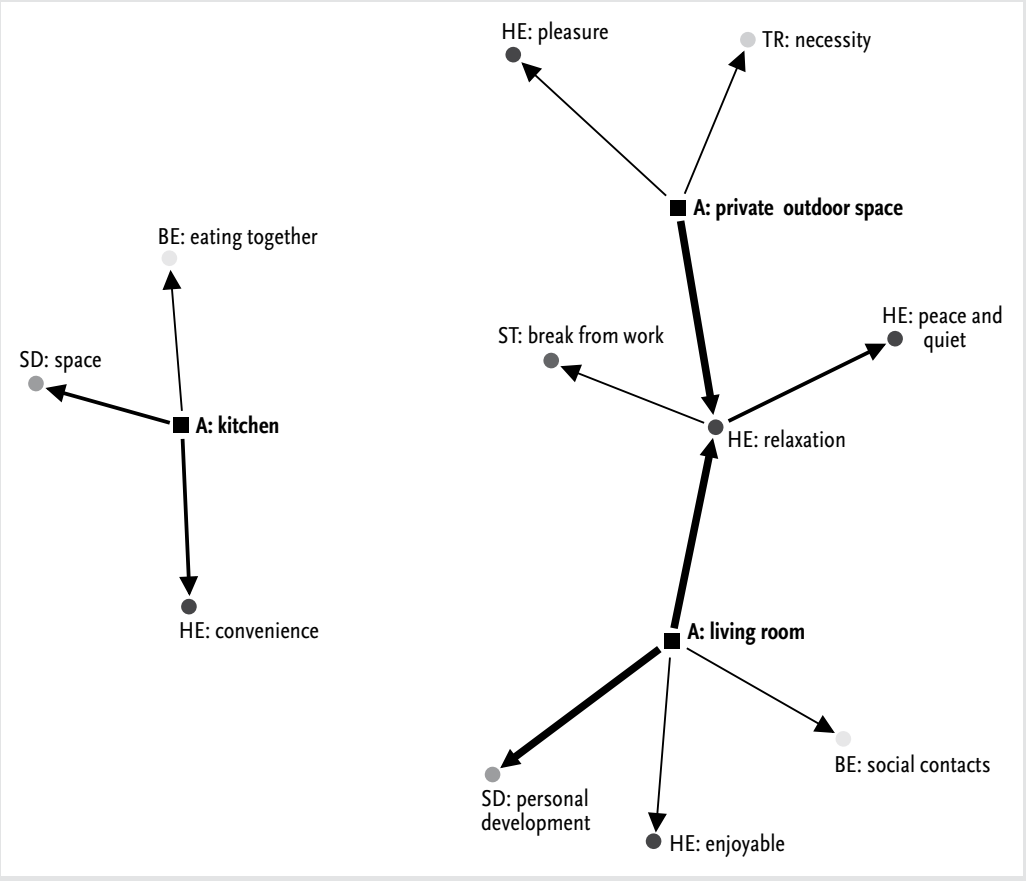
3 One has to take into account that the relation between the different settings of the dwelling is partially determined by the floor plan. This data is lacking and could therefore not be taken into the analysis.

Figure 6.13 Network representation of the most mentioned affordances of the dwelling in a city centre type of residential environment (cut-off level >15)



rural network has few links. The dwelling is a centre of activities in both networks. In the city centre type of residential environment, the focus is on the living room, whereas in a rural type of residential environment, the interconnection between the kitchen, living room and private outdoor space makes the dwelling a centre of activities. Another striking point is that in the dwelling, the family relatedness that became obvious in the previous analyses of rural networks does not show up in this meta-analysis of the most frequently mentioned meanings for all activities in the dwelling. This is due to the high cut-off level. The meanings *personal development of the child* and *sense of safety* have been left out because their frequency is lower than 15. Even though

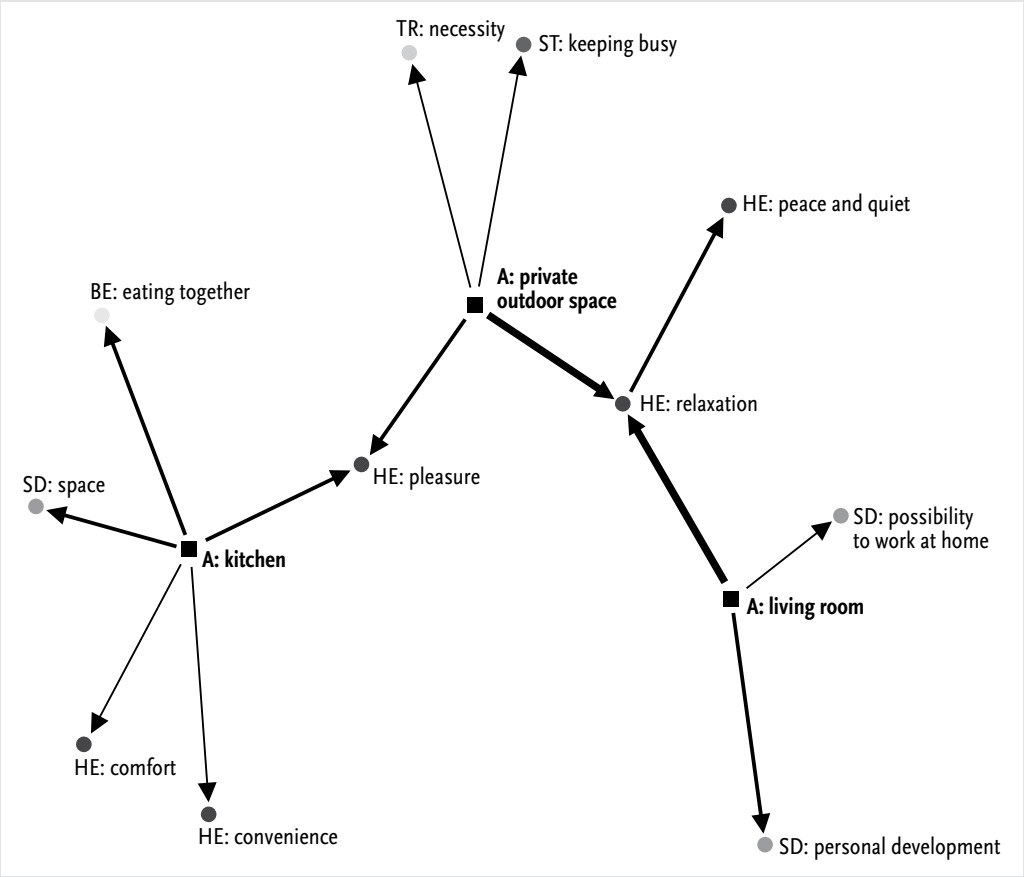
Figure 6.14 Network representation of the most mentioned affordances of the dwelling in a suburban type of residential environment (cut-off level >15)



many families with children live in a rural type of residential environment, still 44 per cent of all rural respondents live in a one- or two-person household. As one might expect, people who live in a one- or two-person household mentioned the activity being together with the family only a few times, and they mentioned children playing even less often.

The meta-analyses nicely illustrate Rapoport's (1990) concept of the dwelling as a system of settings in which systems of activities take place. In the city centre, the living room is the most central sub-setting; many diverse activities have been assigned to the living room with many different meanings. These meanings cover several value types such as hedonism, benevolence, stimula-

Figure 6.15 Network representation of the most mentioned affordances of the dwelling in a rural type of residential environment (cut-off level >15)



tion and self-direction. In the city centre, the function of entertaining guests is more prominent than in a suburban or rural type of residential environment. In the suburban network the kitchen forms a separate sub-network; it shares no activities and meanings with other rooms in the dwelling. The private outdoor space and the living room do share some activities and meanings, indicating that different rooms can have similar affordances. The rural network has again a different structure. The private outdoor space connects the other two sub-settings (living room and the kitchen). So in rural types of residential environment, the private outdoor space is an important sub-setting of the dwelling. Many activities take place there, and these have different meanings.

There is a resemblance between the meaning structure of the garden (Figure 6.12) and that of the living room (Figure 6.3); they share many activities and meanings (esp. children playing and entertaining guests). This is what Grampp (1990) referred to as the living garden; if weather permits, the garden takes over the function of the living room. So the features of the garden in rural types of residential environment afford the garden to be a living garden.

6.2 Subdivided meaning structures of activities in the residential environment

This section presents the subdivided meaning structures of activities within 15 minutes of the dwelling and over 15 minutes of the dwelling. There is also a group of other activities that have no time frame. Finally, all these relations are put together in a meta-analysis of all activities in the residential environment. These meta-networks will show in what way activities in the residential environment and meanings connected to those activities differ between a city centre, suburban and rural type of residential environment.

6.2.1 Activities within 15 minutes of the dwelling

The activities within 15 minutes of the dwelling differ significantly across the three types of residential environment (see Table 6.14). City centre dwellers mentioned going out more often than people living in either a suburban or a rural type of residential environment. Shopping was mentioned most by people living in the city centre or the suburbs. This is what one might expect based on the residential environment typology. City centres and to a lesser extent suburban areas have more facilities for going out (cinemas, restaurants, cafés) and fun shopping. Therefore people living in a city centre or suburban area have these facilities close by and apparently use them more often. In contrast, bringing children to school and commuting were mentioned most by people living in a rural type of residential environment. This too is what one might expect; the number of respondents who live in a family with children is highest in rural areas. It is striking that most respondents who live in a rural type of residential environment can get to work in less than 15 minutes. According to the residential environment typology, the density of jobs will be lowest in rural areas. These data indicate that many people who live in a rural area live close to their job.

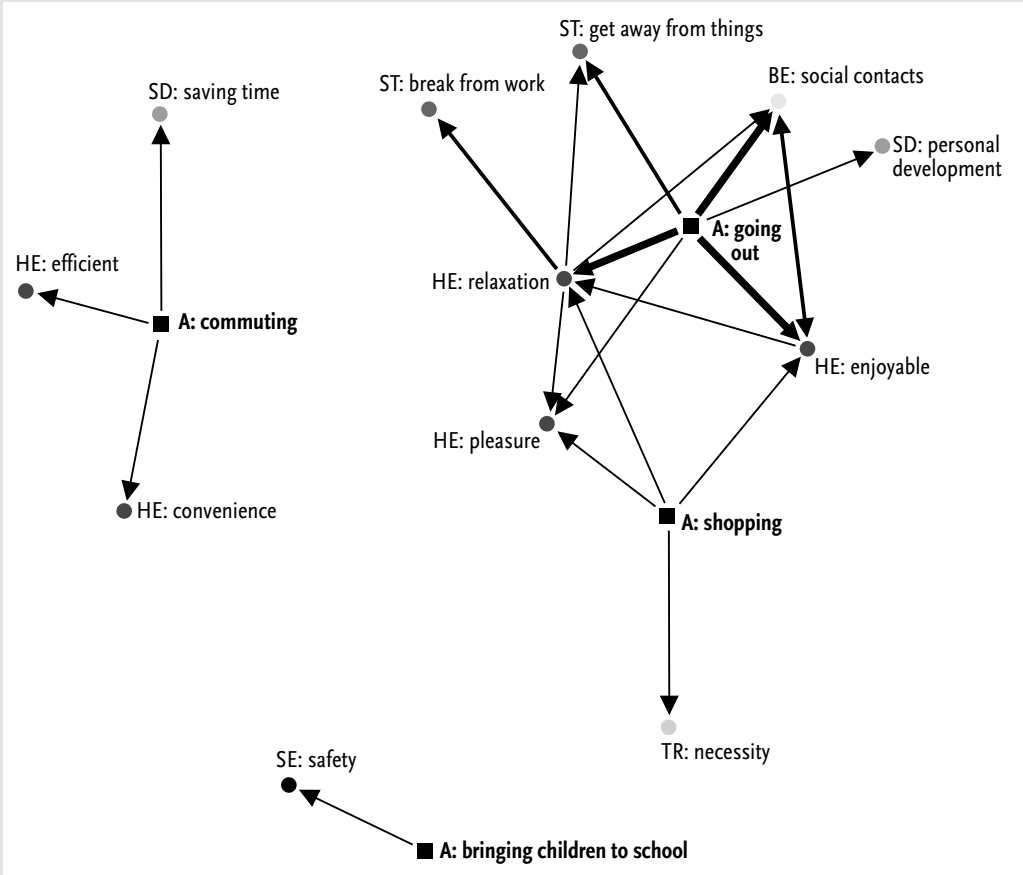
Because the activities differ significantly among the three types of residential environments, one might expect the meaning structures to be different. The activity bringing children to school forms a separate branch in the city centre network (see Figure 6.16). In the suburban (see Figure 6.17) and rural (see Figure 6.18) network, bringing children to school is connected to

Table 6.14 Activities within 15 minutes of the dwelling, subdivided by type of residential environment

Activity	City centre	Suburban	Rural	Total
Going out	128 (55%)	43 (29%)	39 (27%)	210 (40%)
Commuting	35 (15%)	32 (22%)	43 (29%)	110 (21%)
Bringing children to school	11 (5%)	36 (24%)	49 (34%)	96 (18%)
Shopping	57 (25%)	36 (24%)	15 (10%)	108 (21%)
Total	**231 (100%)**	**147 (100%)**	**146 (100%)**	**524 (100%)**

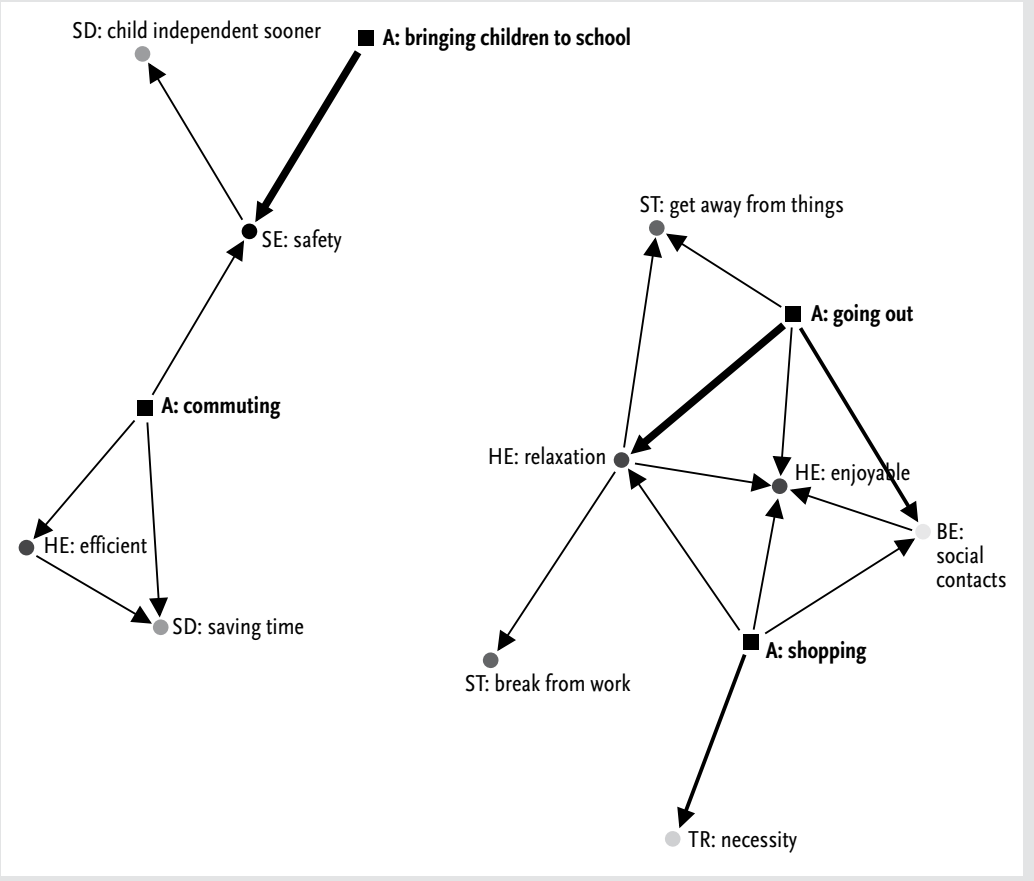
Chi-square: p=0.000

Figure 6.16 Network representation of the meaning structure activities in the residential environment within 15 minutes of the dwelling in the city centre (cut-off level >5)



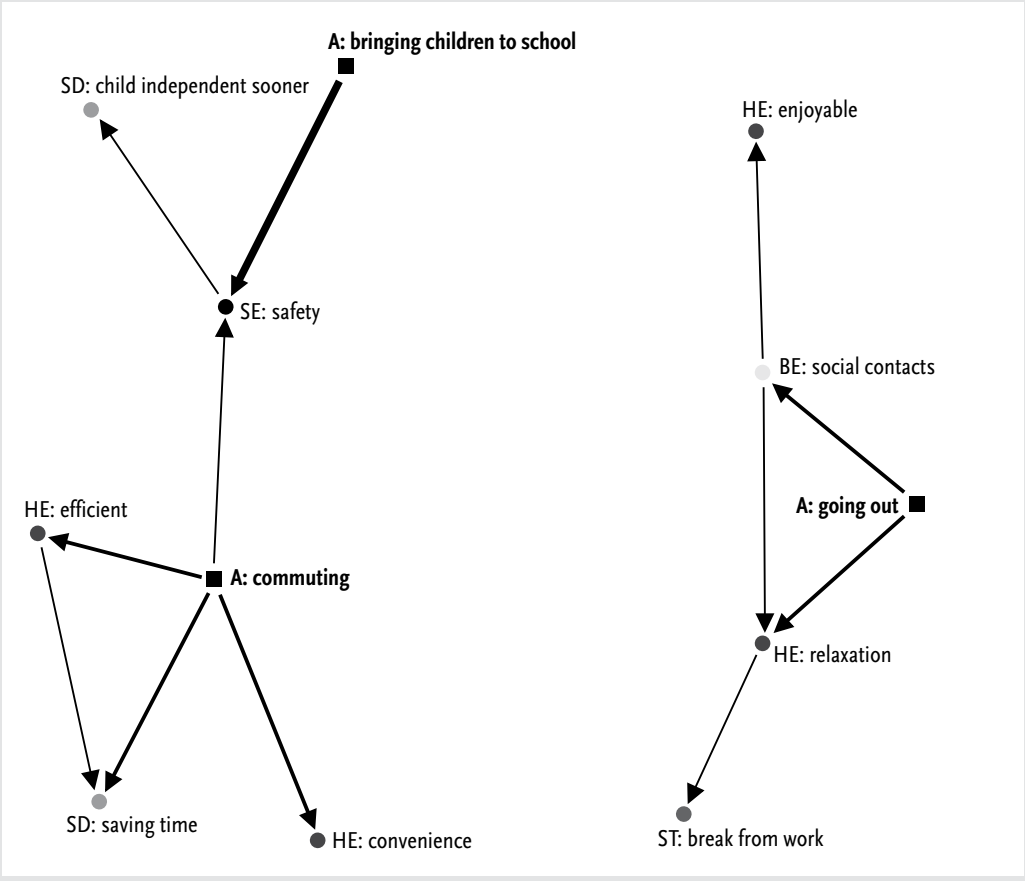
commuting through the meaning *safety*. Going out was mentioned most in the city centre; it also has the most diverse links. What is unique is the link between going out and *personal development*. City centre dwellers go out not only to *relax, forget about work* and to *meet friends*, as respondents living in a suburban or rural type of residential environment do, but also to learn new

Figure 6.17 Network representation of the meaning structure activities in the residential environment within 15 minutes of the dwelling in the suburb (cut-off level >5)



things (*personal development*). This link is only present in the city centre network. Another interesting difference is the link between shopping and *necessity*. This link was mentioned most by city centre dwellers, somewhat less by suburban dwellers and very few times by people living in a rural type of residential environment. Looking ahead at the networks of activities located over 15 minutes away from the dwelling, this difference disappears; also respondents living in a rural type of residential environment have mentioned the link between necessity and shopping. This might indicate that respondents living in a rural type of residential environment have some shops at hand, for example for clothes. For more specialised goods, they would have to go to a

Figure 6.18 Network representation of the meaning structure activities in the residential environment within 15 minutes of the dwelling in rural areas (cut-off level >5)



city (travelling further), whereby shopping becomes a necessity.

As summarised by Table 6.15, in the city centre the activity going out dominates the meaning structure. Going out is connected to diverse meanings such as *social contacts, personal development, relaxation* and *a break from work*. The activities going out and bringing children to school are important in the suburban network. Finally, in the rural network bringing children to school becomes even more important than going out. Through the activity bringing children to school, *safety* is a very important meaning in suburban and rural networks but completely lacking in the city centre. In the city centre, the activities going out and fun shopping share many meanings.

Table 6.15 Key features of the meaning structure for activities within 15 minutes of the dwelling

< 15 minutes	City >5	Suburb >5	Rural >5
Most mentioned link	A: Going out – relaxation (n=36) A: Going out – social contacts (n=25) A: Going out – enjoyable (n=24)	A: Bringing children to school – safety (n=24) A: Going out – relaxation (n=19) Safety – don't know (n=18)	A: Bringing children to school – safety (n=34) Safety – don't know (n=25) A: Going out – social contacts (n=16)
Most mentioned meaning (m1)	Relaxation Enjoyable Social contact	Safety Relaxation Social contact	Safety Social contact Relaxation
Most mentioned meaning (m2)	Social contact Enjoyable Break from work	Enjoyable	Enjoyable Child independent sooner
Activity connected to most diverse meanings (m1)	A: Going out is connected to 6 different meanings (m1)	A: Going out and shopping are connected to 4 different meanings (m1)	A: Commuting is connected to 4 different meanings (m1)
Influential meaning	Relaxation is connected to 4 different meanings (m2)	Relaxation is connected to 3 different meanings (m2)	Social contacts is connected to 2 different meanings (m2)

6.2.2 Activities over 15 minutes from the dwelling

There are no significant differences among activities further than 15 minutes away from the dwelling across the three types of residential environment (see Table 6.16). Still we see that people living in a rural area mentioned going out more often than city centre dwellers and people living in a suburb. This is what one might expect to find, based on the residential environment typology used in this research. With fewer facilities in the residential environment, people living in a rural type of residential environment generally have to travel further to go out than people living in a city centre. Commuting was mentioned most by people in the suburbs.

Comparing activities within 15 minutes of the dwelling with activities over 15 minutes from the dwelling, it is striking that for all activities the majority are performed within 15 minutes of the dwelling. This is particularly true for bringing children to school. People also do not seem to travel far when going out or going shopping. Only for commuting do 50 per cent of the respondents travel more than 15 minutes. Based on the residential environment typology one might expect people who live in a rural type of residential environment to travel further to their work, compared to city centre dwellers. Because, in general there are more job opportunities in city centres, than in rural areas. However, there is no significant difference between travel time to work among the three types of residential environment.

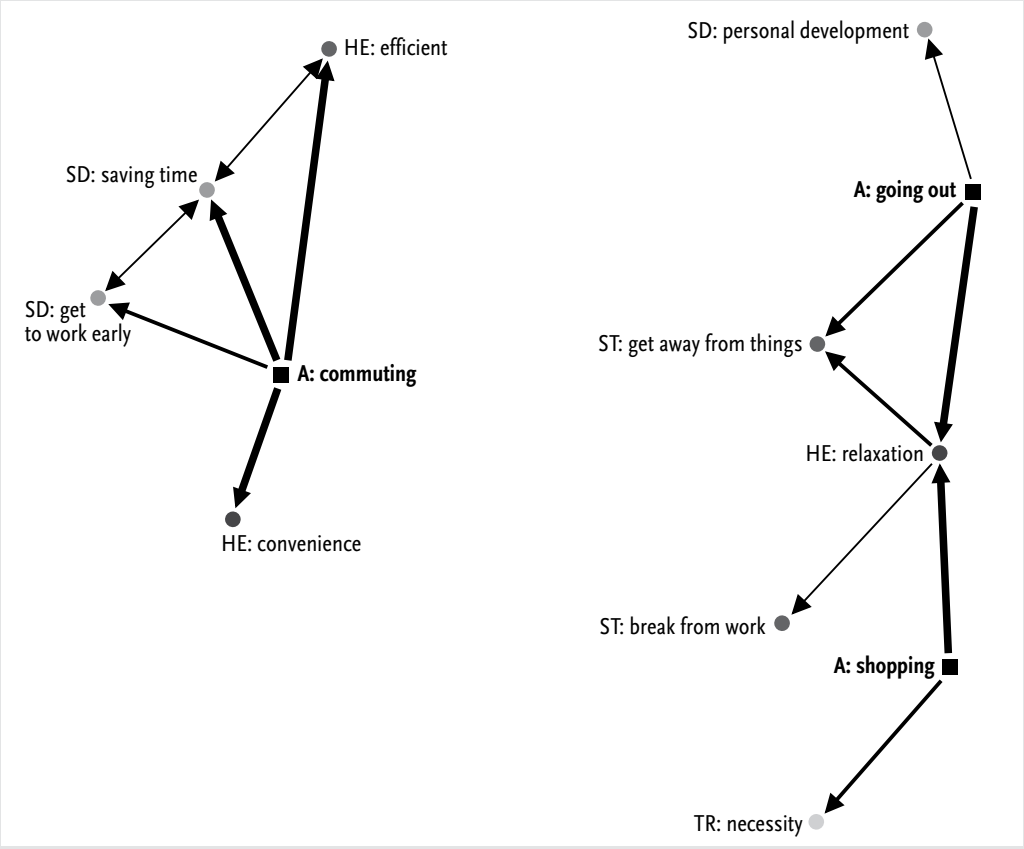
City centre dwellers mentioned most often the activities in the residential environment within 15 minutes of the dwelling. One might expect this result because, according to the residential environment typology, they should live close to many facilities. Another interesting point is that the activities within 15 minutes of the dwelling differ significantly, but activities more than 15 minutes away from the dwelling do not. In other words, the type of residential

Table 6.16 Activities over 15 minutes from the dwelling, subdivided by type of residential environment

Activity	City centre	Suburban	Rural	Total
Going out	22 (29%)	15 (22%)	25 (35%)	62 (29%)
Commuting	33 (44%)	35 (51%)	28 (39%)	96 (45%)
Bringing children to school	0	1 (1%)	4 (6%)	5 (2%)
Shopping	20 (27%)	17 (25%)	14 (20%)	51 (24%)
Total	**75 (100%)**	**68 (100%)**	**71 (100%)**	**214 (100%)**

Chi-square: p=0.158 (over 20% of the cells have an expected value less than 5)
Chi-square (without bringing children to school): p=0.415

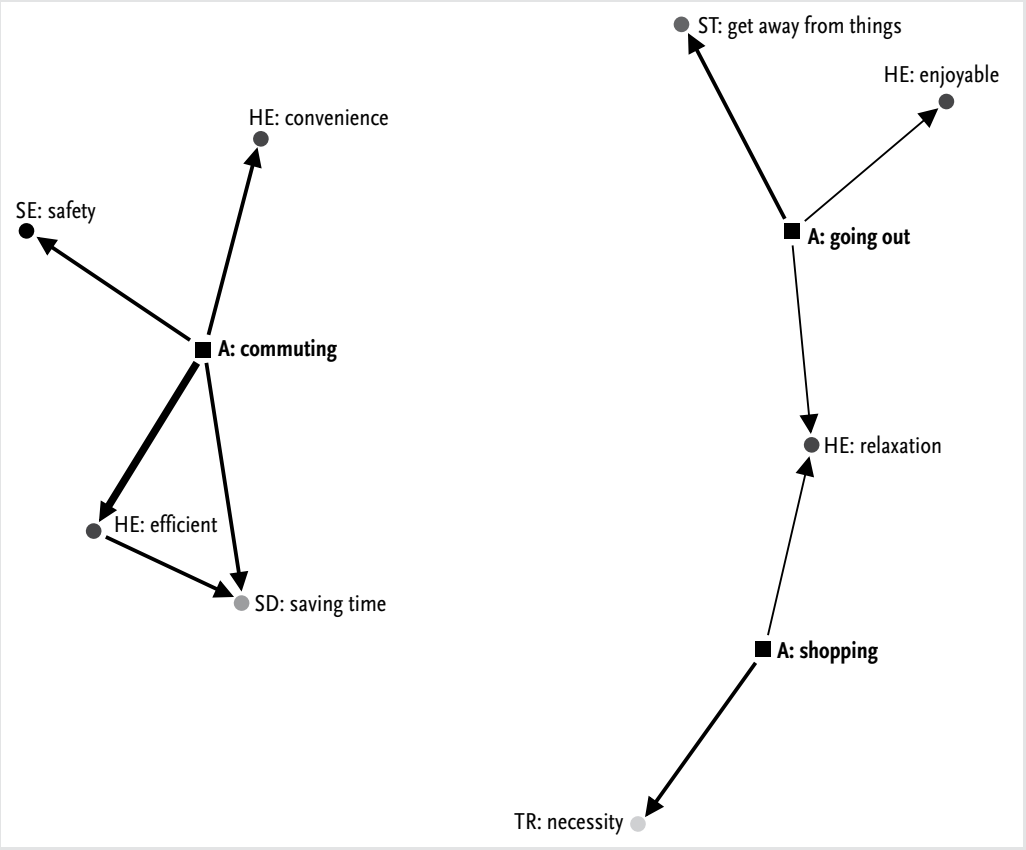
Figure 6.19 Network representation of the meaning structure activities in the residential environment over 15 minutes from the dwelling in the city centre (cut-off level >3)



environment does influence activities close by the dwelling but not those further away. People seem to use the facilities that are present in a certain type of residential environment.

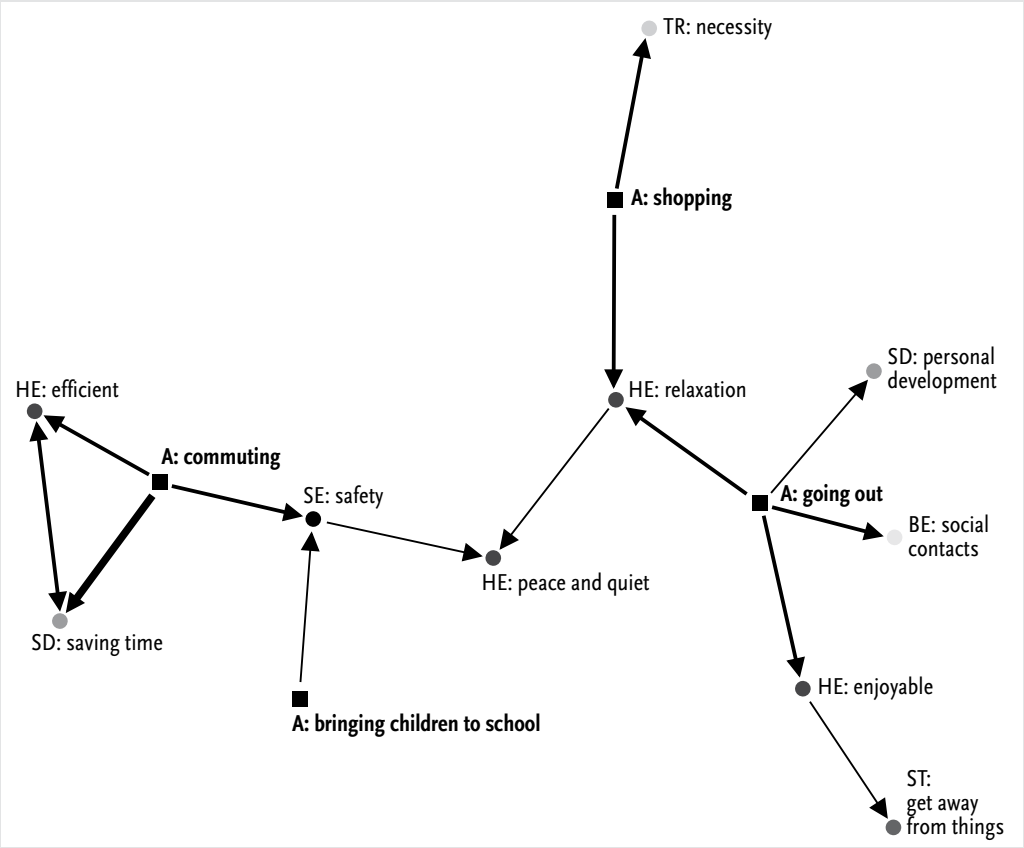
Because commuting is the most frequently mentioned activity in all three types of residential environment, it is not surprising to see that functional

Figure 6.20 Network representation of the meaning structure activities in the residential environment over 15 minutes from the dwelling in the suburb (cut-off level >3)



aspects like *saving time*, *convenience* and *efficiency* are important in all three networks. *Safety* seems to be more of a concern for people living in a suburban (see Figure 6.20) or rural (see Figure 6.21) type of residential environment than for city centre dwellers (see Figure 6.19). This also showed up in the meaning structure of the private outdoor space. It seems that safety is related to living in a family with children (even though here it is connected to commuting). Possibly, people with children are more concerned about their children's safety and therefore that of themselves. People without children might not be so safety-conscious. The link between going out and *personal development* now also appears in the rural network. The meaning personal development is mainly connected to going to a museum or theatre. It is very like-

Figure 6.21 Network representation of the meaning structure activities in the residential environment over 15 minutes from the dwelling in rural areas (cut-off level >3)



ly that respondents living in a rural type of residential environment have to travel more than 15 minutes to visit a museum or theatre. Therefore this link might indicate that for people living in a rural area, going out and travel over 15 minutes are related to going to a museum or theatre. In contrast, going out somewhere within 15 minutes travel time would indicate going to a café or restaurant, amenities that are found in almost every village. So for people living in the city centre, going out within 15 minutes of the dwelling affords not only *relaxation, social contacts* and *enjoying the company of friends* but also *personal development*. For respondents living in a rural type of residential environment, going out within 15 minutes of the dwelling only affords relaxation and social contacts (meeting friends in a bar or going to a restaurant), whereas going out

Table 6.17 Key features of the meaning structure for activities over 15 minutes from the dwelling

> 15 minutes	City >3	Suburb >3	Rural >3
Most mentioned link	A: Commuting – saving time (n=10) A: Going out – relaxation (n=7) A: Commuting – efficiency (n=7) A: Commuting – convenience (n=7)	A: Commuting – efficiency (n=12) A: Commuting – saving time (n=7) A: Commuting – convenience (n=6)	A: Commuting – saving time (n=12) A: Going out – relaxation (n=7) A: Commuting – efficiency (n=7)
Most mentioned meaning (m1)	Relaxation Saving time Efficiency Convenience	Efficiency Saving time Convenience Relaxation	Saving time Relaxation Efficiency Safety
Most mentioned meaning (m2)	Saving time Getting away from things	Saving time	Saving time Peace and quiet
Activity connected to most diverse meanings (m1)	A: Commuting is connected to 4 different meanings (m1)	A: Commuting is connected to 4 different meanings (m1)	A: Going out is connected to 4 different meanings (m1)
Influential meaning	Relaxation and saving time are connected to 2 different meanings (m2)	Efficiency is connected to 1 meaning (m2)	All direct meanings (expect get away and peace and quiet) are connected to 1 meaning (m2)

and travel more than 15 minutes away also afford personal development.

Summarising, in all three networks of activities performed over 15 minutes away from the dwelling, commuting is the most frequently mentioned activity (see Table 6.17). Functional aspects like *saving time, efficiency* and *convenience* are important. An interesting difference is that no link between commuting and *safety* is present in the city centre network, whereas it is present in both the suburban and rural networks. Looking at both the network of activities within 15 minutes of the dwelling and that of activities over 15 minutes from the dwelling, we can conclude that type of residential environment does affect activities within 15 minutes of the dwelling. In contrast, the type of residential environment does not seem to affect activities performed over 15 minutes from the dwelling. Even though we only took a few activities into account, the data indicate that the direct residential environment seems to have greater importance for people's everyday activities.

6.2.3 Other activities in the residential environment

This section presents the meaning structures for activities in the residential environment for which no travel time had been asked. That question was skipped for these activities because it could vary widely in each instance. For example, one might visit a friend who is also a neighbour; in that case, the travel time would be under 5 minutes. Yet another time, the friend might live 100 kilometres away, so the trip would take an hour. Other activities in the residential environment do not differ significantly among the three types of residential environment. Daily errands and recreation were mentioned most by all respondents (see Table 6.18).

The three meaning structures for daily errands are very similar (see Table

Table 6.18 Other activities in the residential environment, subdivided by type of residential environment

	City (n=235)	Suburban (n=202)	Rural (n=222)	Total (n=659)
Daily errands	191	159	173	523
Recreation	134	137	152	423
Sports	103	84	105	292
Visiting friends	59	88	90	237
Going to a club	34	33	47	114
Total	**521**	**501**	**567**	**1589**

Chi-square: p=0.090

Table 6.19 Key features of the meaning structure for daily errands

Daily errands >3	City	Suburban	Rural
Most mentioned link	Close by – convenience (n=28) Close by – saving time (n=20) Good quality products – don't know (n=14)	Close by – convenience (n=23) Close by – saving time (n=13) Good quality products – don't know (n=10) Freedom of choice – don't know (n=10)	Close by – convenience (n=22) Freedom of choice – convenience (n=10) Good quality products – health (n=10) Good quality products – don't know (n=15)
Nrm in-degree (prestigious)	Convenience (60)	Convenience (50) Saving time (50)	Saving time (60)
Nrm out-degree (influential)	Close by (60) Good quality products (60)	Freedom of choice (67)	Close by (60) Freedom of choice (60)

6.19). All respondents find it important to have shops for daily errands *close by*; this is convenient and allows them to *save time*. The meaning structures differ in that city centre dwellers put the emphasis most on the meaning close by. One might argue that city centre dwellers have chosen to live in a type of residential environment where many facilities are close by because the proximity of facilities is important to them. As De Graaff and Karsten (2007) have found, the large amount and diversity of facilities in the city centre allow people with a tight time-space budget to combine activities. Respondents living in a rural type of residential environment put more emphasis on *good quality and healthy products*. Besides having shops close by, they find it important that they can buy good quality products. One might argue that because they do not have so many facilities in the vicinity, it is important that the one or two shops that are close by offer good quality products.

The meaning structures of recreation are very similar in a city centre, suburban and rural type of residential environment (see Table 6.20). Recreation mainly consists of going for a walk or taking a ride on the bicycle. Regardless of the type of residential environment, all people feel that going for a walk is *relaxing*. Recreation is one way of getting some exercise that people enjoy.

The same is true for sports; regardless of where one lives, doing sports is a way to stay in good shape. *Health and relaxation* are the most important mean-

Table 6.20 Key features of the meaning structure for recreation

Recreation >3	City	Suburban	Rural
Most mentioned link	Relaxation – break from work (n=10) Relaxation – pleasure (n=9) Relaxation – don't know (n=10) Health – don't know (n=9)	Relaxation – break from work (n=10) Relaxation – pleasure (n=8) Health – don't know (n=10)	Relaxation – peace and quiet (n=10) Relaxation – pleasure (n=9) Relaxation – don't know (n=13) Health – don't know (n=13)
Nrm in-degree (prestigious)	Pleasure (40) Health (40)	Relaxation (33) Pleasure (33) Health (33)	Peace and quiet (40) Pleasure (40)
Nrm out-degree (influential)	Relaxation (100) Nature (20) Health (20)	Relaxation (83) Nature (33)	Relaxation (100)

Table 6.21 Key features of the meaning structure for sports

Sports >3	City	Suburban	Rural
Most mentioned link	Health – don't know (n=46) Relaxation – health (n=11) Health – relaxation (n=7)	Health – don't know (n=28) Health – relaxation (n=9) Relaxation – health (n=7)	Health – don't know (n=36) Health – social contacts (n=9) Relaxation – health (n=9)
Nrm in-degree (prestigious)	Break from work (25) Relaxation (25) Health (25) Social contacts (25) Get away from things (25)	Relaxation (25) Health (25) Social contacts (25) Get away from things (25) Pleasure (25)	Break from work (25) Relaxation (25) Get away from things (25)
Nrm out-degree (influential)	Health (75) Relaxation (50)	Health (75) Relaxation (50)	Health (100) Relaxation (60)

ings for the activity sports (see Table 6.21).

Even though visiting friends was mentioned relatively few times by city centre dwellers, the meanings assigned to the activity are the same in all three types of residential environment. People enjoy the company of their friends. Going out to visit friends creates an opportunity to meet others (*social contacts*) and catch up (*sharing things together*) (see Table 6.22).

Going to a club was mentioned most by respondents living in a rural type of residential environment. The meaning structures do not differ much; regardless of where one lives, people join a club to meet others (*social contacts*) and because they feel involved in their community (*community spirit*) (see Table 6.23).

It is striking to see that for these activities the share of people that has mentioned one of these activities differs between the three types of residential environment. So, apparently different types of residential environment afford certain activities better than others. Still, the meanings attached to these activities are the same in all three types of residential environment. In other words, type of residential environment does not affect the meanings attached to these activities.

Table 6.22 Key features of the meaning structure for visiting friends

Visiting friends >3	City	Suburban	Rural
Most mentioned link	Social contacts – sharing things together (n=12) Social contacts – enjoyable (n=9)	Social contacts – sharing things together (n=20) Social contacts – enjoyable (n=20) Sharing things together – enjoyable (n=7)	Social contacts – sharing things together (n=24) Social contacts – enjoyable (n=10) Enjoyable – social contacts (n=6)
Nrm in-degree (prestigious)	Social contacts (50) Enjoyable (50)	Enjoyable (50)	Social contacts (40) Relaxation (40) Pleasure (40) Enjoyable (40)
Nrm out-degree (influential)	Social contacts (75) Sharing things together (75)	Social contacts (100) Sharing things together (50)	Social contacts (100) Enjoyable (60)

Table 6.23 Key features of the meaning structure for going to a club

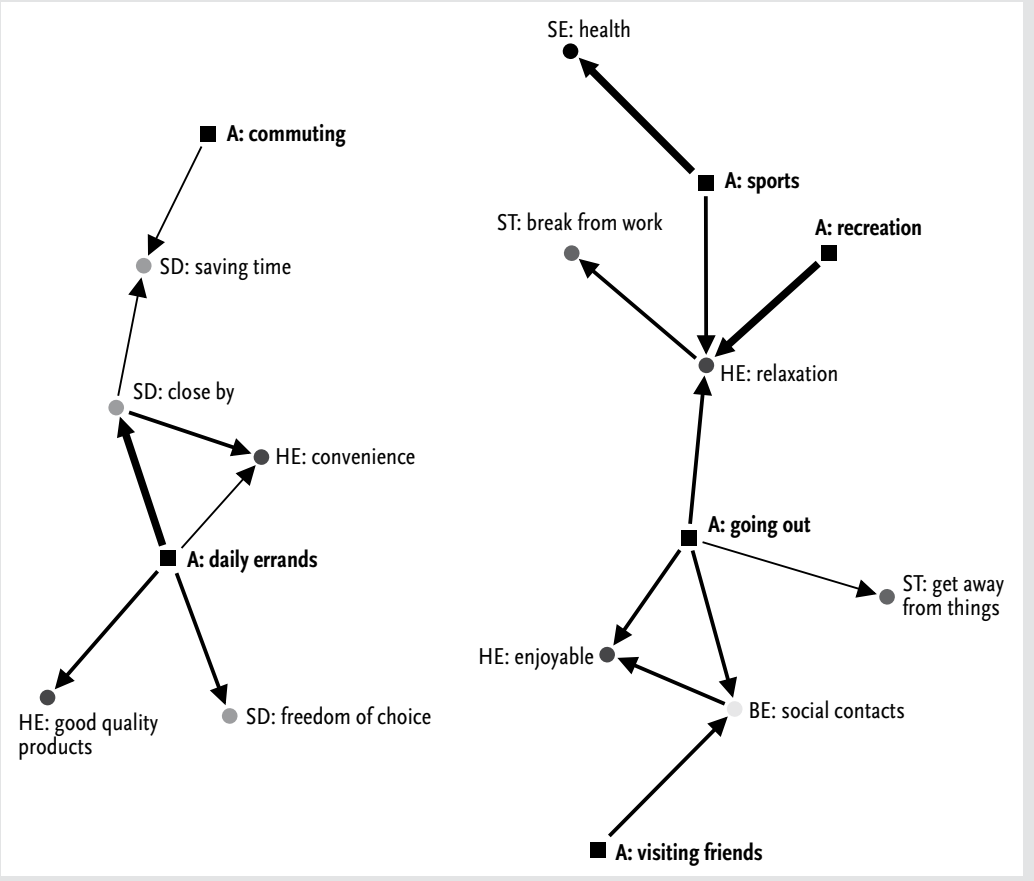
Going to a club >2	City	Suburban	Rural
Most mentioned link	Social contacts – enjoyable (n=4) Community spirit – don't know (n=3) Relaxation – don't know (n=3)	Social contacts – community spirit (n=4) Social contacts – enjoyable (n=4)	Social contacts – community spirit (n=8) Community spirit – social contacts (n=4) Social contacts – relaxation (n=4)
Nrm in-degree (prestigious)	Personal development (25) Enjoyable (25) Getting away from things (25)	Personal development (25) Enjoyable (25) Getting away from things (25) Social contacts (25) Community spirit (25)	Relaxation (50)
Nrm out-degree (influential)	Social contacts (50) Community spirit (25)	Social contacts (100) Community spirit (25)	Social contacts (67) Community spirit (33)

6.2.4 Comparing the most mentioned meanings for activities in the residential environment

This subsection presents the meta-analysis of activities in the residential environment. The setting is the type of residential environment; all activities performed there are aggregated. Each meta-analysis shows how activities and meanings are related. Again, because the meta-analyses are subdivided by type of residential environment, we can see to what extent these relations differ per type of residential environment.

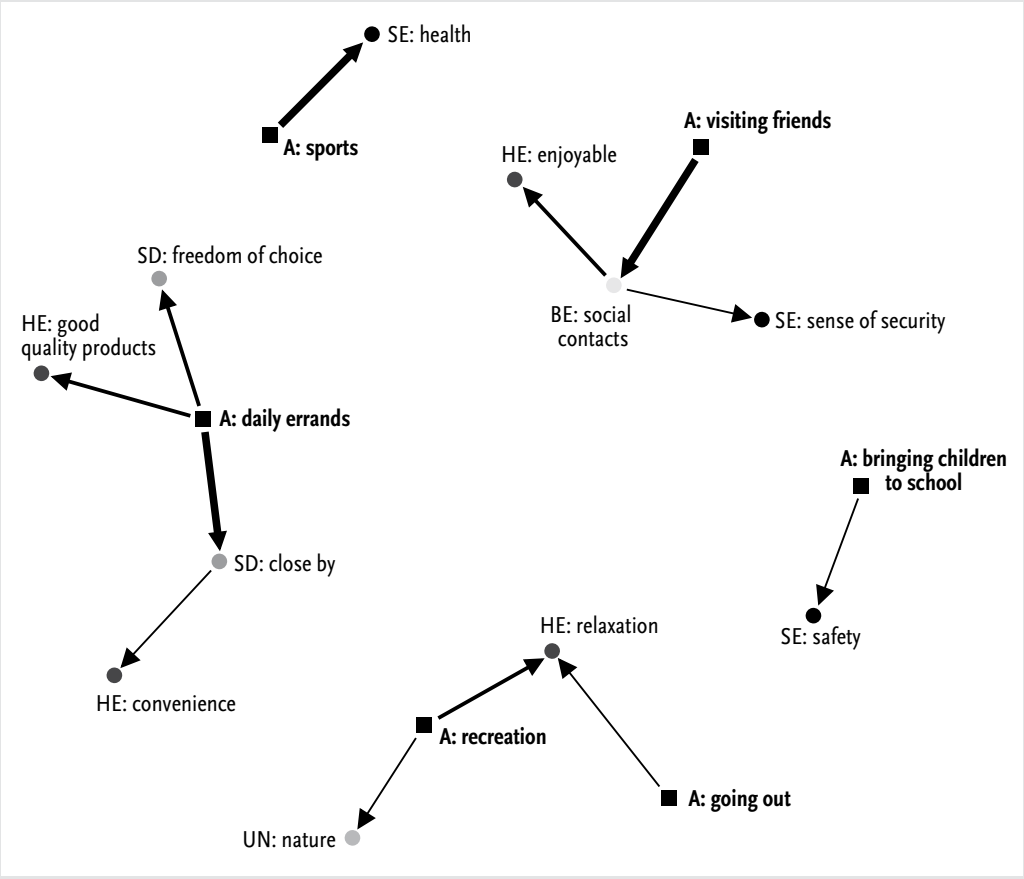
The city centre network representation (Figure 6.22) consists of two sub-networks. First, there is what one might call a functional sub-network; a person just has to do these activities. This sub-network contains the meanings that are connected to the activities daily errands and commuting. For daily errands the meanings *close by*, *freedom of choice* and *good quality products* are especial-

Figure 6.22 Network representation of the most mentioned meanings of all activities in a city centre type of the residential environment (cut-off level >20)



ly important. For commuting, *saving time* is important. Not surprisingly, these meanings fall under the value type self-direction. A person does not have much choice about whether or not to perform these activities; what does matter is whether he can perform these activities independently. Second, there is a sub-network related to leisure activities: sports, recreation, going out and visiting friends. Going out was mentioned most by city centre dwellers, and the meanings they attached to this activity are quite diverse. The value type stimulation is only present in the city centre network. These meanings were also mentioned by people living in a suburban or rural type of residential environment, though less often. The activities recreation, sports and going out are connected

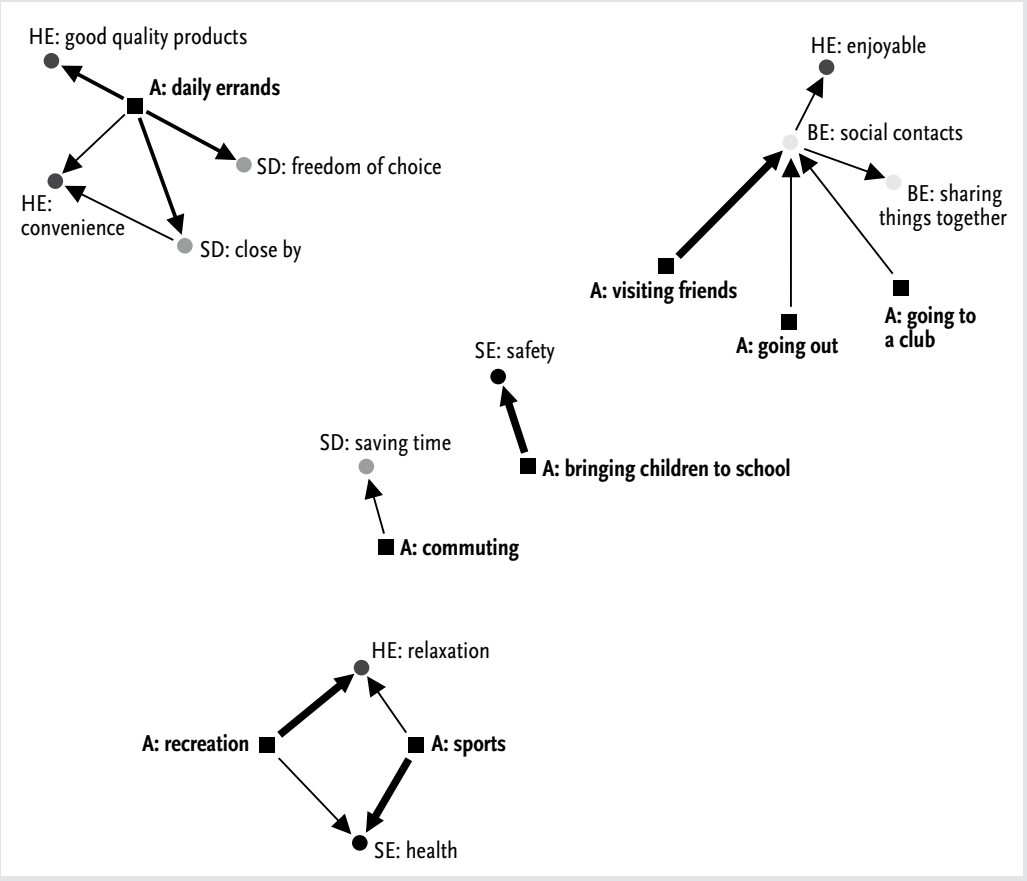
Figure 6.23 Network representation of the most mentioned meanings of all activities in a suburban type of the residential environment (cut-off level >20)



to each other through the meaning *relaxation*. Because these activities have a shared meaning, they may be considered substitutes to some extent. The activities going out and visiting friends are connected to each other through the meaning *social contacts* and thus have similar meanings.

The suburban network (Figure 6.23) is highly fragmented. This might be interpreted to imply that the residential environment consists of different, separate domains. People may use the residential environment to visit friends, thereby fulfilling a need for *social interaction*. Or they may use it for sports in order to keep *healthy*. Or one may bring the children to school etc. This might support Reijndorp's finding that people living in a suburban type

Figure 6.24 Network representation of the most mentioned meanings of all activities in a rural type of the residential environment (cut-off level >20)



of residential environment are highly mobile. They use their car to go different places to do the things they find important to do, whereas city centre dwellers are much more focussed on the city they live in (Reijndorp *et al.*, 1998). The suburban network represents two meanings that have been mentioned by the other respondents, but not as many times. Recreation is connected to *nature* and social contacts to *sense of security*. According to the literature, one might expect these meanings to be mentioned most by people who live in a rural type of residential environment, because both are important factors in people's preferences for rural living (Heins, 2002).

Finally the rural network representation (Figure 6.24) is also somewhat frag-

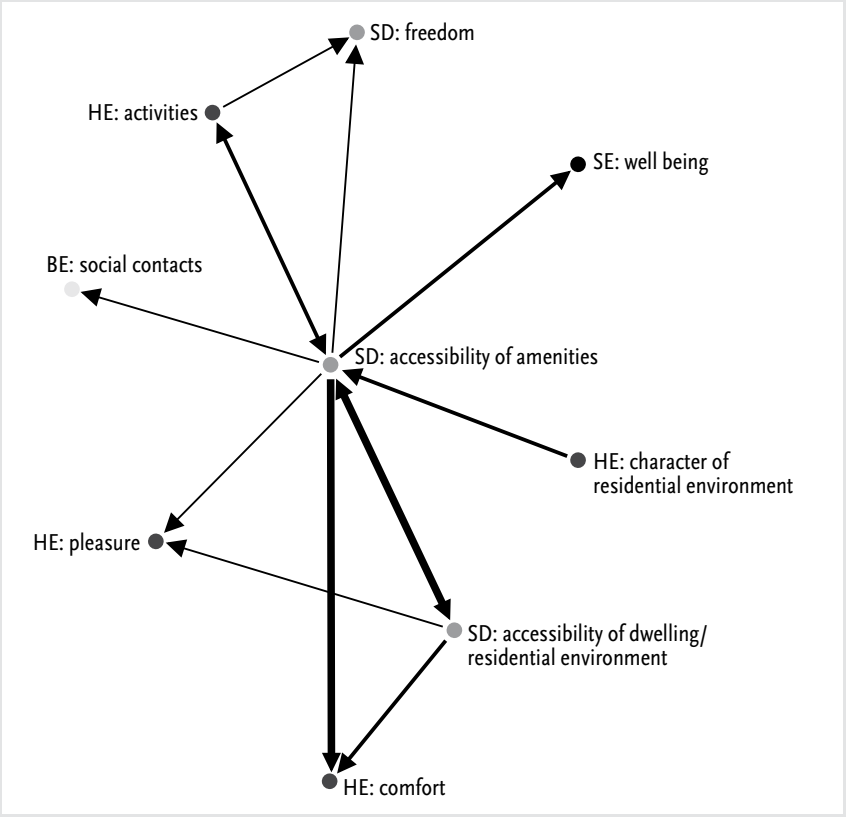
mented, though less so than the suburban network. It shows three groups comprising five sub-networks. The first is a functional group with a sub-network for the activity daily errands. The activities commuting and bringing children to school lie in the middle of Figure 6.24. For these activities, functional aspects such as a *safe route* for travelling to school, *saving time* for commuting and *close by* for daily errands are important. These meanings are all unique to each activity and not connected to any other activity or meaning. So these are very specific activities with non-interchangeable meanings. The second sub-network may be characterised as activities to stay fit, be *healthy* and *relax*. The activities recreation and sports are connected to each other through the meanings relaxation and health. For sports, the emphasis is on health; for recreation, the emphasis is on relaxation. Yet both activities share the same meanings. The third sub-network consists of social leisure activities: going to a club, going out to a bar or café and visiting friends. All three activities have a direct link to *social contacts*. These three activities share exactly the same meanings and seem to be 100% interchangeable.

Summarising, the three types of residential environment seem to be similar in their functional aspects. Regardless of type of residential environment, all people find it important to have shops *close by* and to *save time* when they go to work. These are represented by the value types hedonism and self-direction. The three types of residential environment differ in leisure activities. In the city centre going out has been mentioned most and takes up a central place in the network. The value type stimulation is only present in the city centre network. This might indicate the city centre as a place to get entertained and find distraction from everyday routine. All activities and meanings are well interconnected. In contrast, the suburban network is very fragmented. Each activity has its own meaning. This seems to support Reijndorp's (1998) findings of suburbanites seeing their residential environment as the centre of a polycentric urban network. Finally, the rural network stands out for that going out, going to a club and visiting friends all afford the same meanings, represented by the value type benevolence and hedonism. So, these leisure activities seem to be interchangeable. The same is true for the activities recreation and sports. Furthermore, the relation between bringing children to school and safety is very central in the rural network.

6.3 The meaning of a preference for a city centre, suburban or rural location

All the meaning structures presented in this chapter concern the activities in different settings of the dwelling and residential environment. Before drawing any conclusions on the differences among the meanings of dwelling in a city centre, suburban and rural type of residential environment, we present

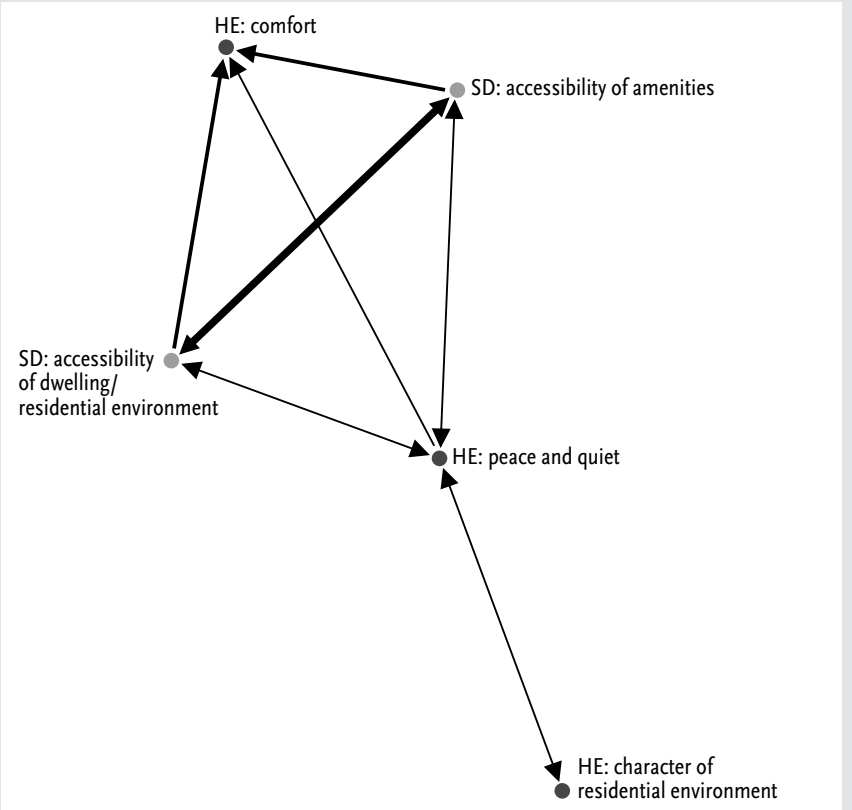
Figure 6.25 What is the main reason why you want to live in a city centre? (cut-off level >3)



data from a companion study by Coolen (2008). Whereas the latter study uses a similar conceptual framework, it focuses on dwelling features and provides data on the meaning people attach to their preference for a dwelling location. The companion study uses five categories for dwelling location: the centre of a large city, the rim of a city, a small municipality, outside the built-up area and no preference. A person who had indicated that he is satisfied with his current dwelling location and that it is on the rim of a large city was asked two questions: first, "Why do you want to live at the rim of a large city?"; and second, "Why is >the reason mentioned before< important to you?" Based on the answers to these two questions, we compiled meaning structures for the preferred dwelling location. These meaning structures represent the reasons why people would prefer to live in a certain type of residential environment.

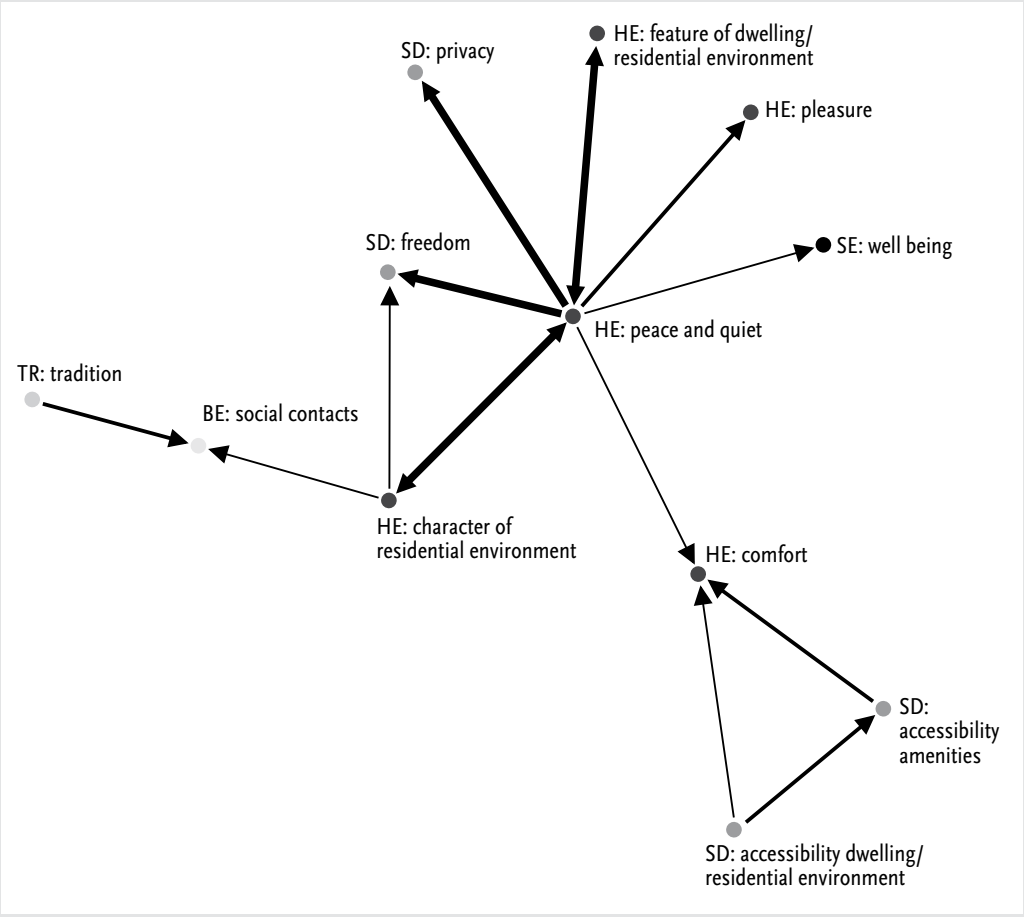
A chi-square test shows a significant difference in the first reason for a pre-

Figure 6.26 What is the main reason why you want to live at the rim of a city (suburban type of residential environment? (cut-off level >3)



ferred location across the three types of residential environment (see Appendix 12). The city centre seems to be most attractive for its amenities. Over 50 per cent of the people who would prefer to live in a city centre have mentioned accessibility of amenities as their first reason. The suburban type of residential environment seems to combine aspects of the urban and rural areas. On the one hand, it is close to city centre amenities. On the other hand, a suburb provides a quiet residential environment. People who would prefer to live at the rim of a large city (in a suburb) mentioned peace and quiet most (31%), followed by accessibility of amenities (28%). Finally, people who would prefer to live in a rural area mentioned many diverse reasons, varying from peace and quiet (34%) to the character of the residential environment (12%), social contacts (12%) and tradition (12%).

Figure 6.27 What is the main reason why you want to live in a small municipality or outside the built-up area (rural type of residential environment)? (cut-off level >3)



Access to amenities is the most prestigious reason for people to live in a city centre (see Figure 6.25). This is in line with the other findings; city centre dwellers go out more often and go fun shopping more often than people living in a suburban or rural type of residential environment. As Burgers and Van der Land (1997) conclude, people are attached to a city not only for the sake of their work or family but also, or perhaps more so, because of its consumption opportunities. City centre facilities afford going out and forgetting about one's work or daily worries. For people who prefer to live in a suburban type of residential environment, the *accessibility of the dwelling and residen-*

tial environment and the *amenities* are most important (see Figure 6.26); again this is also in line with earlier findings. The suburban network of activities in the residential environment is very fragmented (see Figure 6.23). As Reijndorp (1998) described in his study on life in suburban areas, suburbanites see their dwelling as the centre of a polycentric urban network. People go to different places to engage in different activities and have different experiences. Finally the most central meaning for people who prefer to live in a rural type of residential environment is *peace and quiet* (see Figure 6.27). This is in line with findings in the literature; rural areas are believed to be quiet types of residential environment because they have more (green) space compared to suburban areas and city centres. Finding peace and quiet is one of the aspects of the rural idyll in the Netherlands (Van Dam *et al.*, 2002). The correspondence analysis presented in Chapter five also indicated an association between the general meanings peace and quiet and a rural type of residential environment. The rural network contains another link that is not present in the other two networks. That is the link between *tradition* and *social contacts*. People want to live in a rural type of residential environment either because they grew up there or because they have family or friends in a particular village and want to live close to them. This seems to indicate that people who live in a rural type of residential environment are more attached to their village, compared to people who live in a city centre or suburban type of residential environment. The importance of tradition is not directly visible in the rural networks of activities in the dwelling and residential environment. However, the rural network does show that social contacts are important for different activities in the residential environment (visiting friends, going to a club, going out).

6.4 Conclusion

The aim of this chapter is to show to what extent meaning structures differ per type of residential environment. One of the basic assumptions of the theoretical framework is that different types of residential environment might afford different meanings. The environment is a system of settings in which systems of activities take place (Rapoport, 1990). Because there is a reciprocal relation between people and the environment they live in, different settings of the environment might result in different activities. The focus of this research is on activities in the dwelling and in the residential environment and, more specifically, on the meanings people attach to these activities. Chapter four concluded that type of residential environment influences activities to some extent, especially leisure activities. This chapter analyses meaning structures subdivided by type of residential environment in order to find out the extent to which different types of residential environment result in dif-

ferent meaning structures. First, the unique links of the city centre are discussed, then those of suburban types of residential environment and finally the unique links in rural types of residential environment.

6.4.1 Unique links in a city centre type of residential environment

City centre dwellers mentioned working at home most (see also Chapter four, logistic regression models). People work at home in the living room as well as in the study. Working at home for city centre dwellers means that they can *save time*, *work concentratedly* and *do what they want*, but people also work at home because they have their *own company* (all meanings belong to the value type self-direction). These meanings are also partly present in the suburban and rural networks, though they are much less dominant there. One might assume that knowledge workers have the kind of job that allows people to work at home, whereas production workers mostly cannot work at home. The city centre is an attractive type of residential environment for knowledge workers because of the presence of many offices, institutions of higher education and research institutes (Engelsdorp Gastelaars and Hamers, 2006).

In the city centre, the links between the activity being outside and *sense of space* and *sense of freedom* are unique in the private outdoor space. One would expect to find the opposite; a sense of freedom and a sense of space might be considered more likely in a rural type of residential environment. Indeed, this would be more in line with the motivations people give for their preference for a rural residential environment (Heins, 2002). The city centre generally has little green space. One might argue that the private outdoor space contributes most to the need for a sense of space and freedom. In contrast, people living in either a suburban or rural type of residential environment have more (green) space in their residential environment. So their need for a sense of space and freedom is also afforded by the (green) space in the residential environment. Again, these meanings belong to the value type self-direction.

Finally, the link between *daily errands* and *close by* is rather dominant in the city centre. This might be explained by the fact that city centre dwellers have chosen to live in a type of residential environment where many facilities are present because the proximity of facilities is important to them. This is also clearly represented by Figure 6.25, the most frequently mentioned reason for people to prefer to live in a city centre is access to amenities. The meaning close by also belongs to the value type self-direction. So, the value type self-direction seems to be an important one for city centre dwellers, compared to people living in a suburban or rural type of residential environment.

6.4.2 Unique links in suburban types of residential environment

The meaning structures for the suburban type of residential environment seem to be in between those for the city centre and rural types. One might expect this, given that the features of a suburban type of residential environment on which the typology is based lie in between the features of city centre and rural types of residential environment. For example, building density is lower in a suburb than in city centres, but higher than in a rural type of residential environment. Another example is that, generally speaking, people living in a suburban type of residential environment will live closer to cinemas than people living in a rural type of residential environment but the suburbanites will need to travel further than city centre dwellers. Therefore, the meaning structures in a suburban type of residential environment have few unique links.

The meaning structure for the private outdoor space contains some notable links. Gardening is connected both to *necessity* and to *the garden looks beautiful*. These links are also present in the other two meaning structures but have been mentioned less often. Even though the majority of people enjoy gardening, some people see it as a chore. Gardening can be a rewarding activity, a nice way of keeping busy. Through gardening, a person can realise his own ideas about style and beauty, making the garden a showpiece of the dwelling (Bhatti, 1999). Still, it does require some work, which not everyone enjoys. So, the meanings necessity and garden looks beautiful indicate that people do enjoy having a garden where they can sit and relax. But, not all people enjoy the work it takes to keep it up. Now, why is this link most prominent in a suburban type of residential environment? One might argue that dwellings with a garden are relatively rare in city centres. If people choose to live in a dwelling with a garden, it will be a conscious choice. City centre dwellers choose to live in a dwelling with a garden because they like gardening. In both a suburban and a rural type of residential environment, dwellings with a garden are much more common. There, people might take it for granted that the dwelling has a garden. People who prefer to live in a rural area want to do so for the peace and quiet of a rural type of residential environment (see Figure 6.27). Besides, people who live in a rural area seem to be more outdoor-oriented (for example, they enjoy gardening and keeping busy) than people who live in a city centre or suburb. In contrast, people who live in a suburb consider, besides finding peace and quiet, accessibility of the dwelling and residential environment and access to amenities most important.

In the meaning structures of activities in the residential environment, no unique links occur.

6.4.3 Unique links in rural types of residential environment

Family-related activities are important in the rural type of residential environment. This has already been demonstrated by the correspondence analyses and logistic regression models in Chapter four. This also has some implications for the activities performed in the dwelling and residential environment as well as for the meanings attached to those activities. In both the living room and kitchen, the function eating together with the family is much more prominent than in the other two networks. By *eating with the family*, people can *spend time together* and *share things together*. Eating is an important activity for the value type benevolence. Of all respondents who mentioned eating, 60 per cent have at least one meal at home each day. Over 80 per cent of all respondents who mentioned eating have a meal at home at least six days a week. At that time of day, one sits down with the other family members. During dinner, people talk through their day. Because eating with the family is such a regular event, it may be characterised as a family-related activity and it seems to contribute substantially to a sense of togetherness.

Both the living room and the garden afford a *safe place for children to play and learn*. These are important functions of both the living room and the garden in a rural type of residential environment. It seems that the garden takes over the function of a safe place to play and learn from the living room when the weather is nice. Also the activity bringing the children to school makes up a large part of all activities performed within 15 minutes of the dwelling in a rural type of residential environment. Having a safe route to bring the children to school is very important. People living in a rural area attach the meaning *safety* both to the dwelling and to the residential environment. The meaning safety is mostly related to family-life activities. Many people with young children prefer to live in either a suburban or a rural area because they believe it provides a safe environment for their children to grow up in compared to city centres (Karsten *et al.*, 2006). Both a sense of safety and a feeling of security are part of the rural idyll (Heins, 2002). Because the meanings sense of safety and sense of security are most pronounced in the rural network, it seems that part of that ideal image is reflected in the meanings people who live in a rural type of residential environment attach to their dwelling and residential environment. Finally, for daily errands, instead of proximity (which is also important), the emphasis is more on *good quality* and *healthy products*. Besides having shops close by, respondents living in rural types of residential environment find it important that they can buy good quality products. This might be because they do not have so many facilities close by; it is more important to them for the one or two shops that are close by to offer good quality products.

6.4.4 Does the meaning of dwelling differ per type of residential environment?

To conclude this chapter, we return to the main research question of this thesis: To what extent do meaning structures differ per type of residential environment?

For activities in the dwelling, household chores have similar affordances. Regardless of where one lives, the functional aspects of space, comfort and convenience are important for cooking, which are exclusively assigned to the kitchen. So we could say that all people want the kitchen to be a functional space. Furthermore, all respondents mentioned that the living room and the private outdoor space are places to relax and to be together with family or friends. These meaning structures differ with respect to social leisure activities and family-related activities. In the city centre, the emphasis is on being together with friends (the activity entertaining guests); in suburban and rural areas being together with the nuclear family is also clearly present. Values like a sense of safety and the personal development of the child only occur in the suburban and rural networks. These different emphases in the meaning structures are probably caused by the preferences of families with children for a suburban and rural type of residential environment. Indeed, the majority of families with children live in a suburban or rural area. Having (young) children especially affects the meaning structures of the living room and the private outdoor space. People with young children want a safe place where their children can play in and around the house.

Activities in the residential environment that belong to the category household chores (daily errands and commuting) are not differentiated among the three types of residential environment. Regardless of the type of residential environment, all people find it important to have shops for daily errands close by and want to buy good-quality products. The value types hedonism and self-direction are important for these activities.

Leisure and family-life activities and the meanings attached to them do differ per type of residential environment. These differences are in line with what one might expect based on the characterisation of the three types of residential environment given in Chapter two. People who live in a city centre mentioned going out more often than people living in a suburban or rural type of residential environment. All respondents related the value types hedonism and benevolence to the activity going out, but city centre dwellers also related the value type stimulation to this activity. This can be interpreted to imply that the city is a place where one can be entertained and thereby forget about work. The main reason for people to prefer living in a city centre is the accessibility of amenities. So regarding amenities for leisure activities, we could say that city centre dwellers use these amenities well and that they attach the most varied meanings to them. This seems to be in line with the findings of

Burgers and Van der Land (1997). They found that people are increasingly connected to the city because of its consumption opportunities, for example fun shopping, night clubs or theatres (Burgers and Van der Land, 1997).

The suburban network is highly fragmented; each activity has its own unique meaning. The second most frequently mentioned reason to prefer living in a suburb is the accessibility of the dwelling and the residential environment and its amenities. This is what Reijndorp *et al.* (1998) also describes in their study on living in suburban areas. People who live in suburban areas see their dwelling as the centre of a polycentric urban network. They use the car to go different places for different activities related to, for example, work, leisure or social contacts (in contrast, city centre dwellers are mainly focused on the city they live in) (Reijndorp *et al.*, 1998).

In the rural network, the activities going to a club, going out and visiting friends are all connected to the meaning social contacts. Therefore we classify these activities as social leisure activities. The most frequently mentioned reason for people to prefer living in a rural area is peace and quiet. Besides a quiet residential environment, tradition is also an important reason. Tradition indicates that people want to live in a village because they grew up in one or because they have always lived in a particular village. This reason is not mentioned by people in a city centre or suburb. So it seems that social ties and a sense of community are more important in a rural than in a city centre or suburban type of residential environment.

7 Conclusions and discussion

The aim of this study is to deepen current insight into the meaning of dwelling in city centre, suburban and rural types of residential environment. Commensurate with this aim eight research questions were formulated. These are recapped in the first section of this concluding chapter, and the main findings are then summarised. The discussion starts in the second section, where we evaluate the residential environment typology and its effect on activities and meanings. Then, in the third section we evaluate the research method by turning to the interplay of activities and features that came to light while researching the meaning of dwelling. In the final section, we reflect on the value of using network analysis to study the relation between settings, activities and meanings. We conclude the chapter by proposing some directions for future research.

The conceptual framework (presented in Chapter two) underpinning this study assumes a reciprocal relation between people, settings and activities. A setting is an area within the environment defined by specific features. The setting used in this research is a dwelling within a residential environment. This delimited setting contains sub-settings. For example, the kitchen is a sub-setting of the dwelling, defined by the presence of a feature such as a stove that makes it possible to cook there. The specific meanings of dwelling are assumed to lie in the relations between people's activities, on the one hand, and features in the dwelling and residential environment, on the other (Chemero, 2003). And that assumption sets the parameters for this study: the relation between activities and meanings in sub-settings of the dwelling and the residential environment. Particular residential environments offer various opportunities and are conducive to certain experiences. Thus, we may assume that different settings afford different meanings. Indeed, this study investigates to what extent different settings lead to different meanings. The relation between settings, activities and meanings is represented in a meaning structure; taken together, the meaning structures give insight into the meaning of 'dwelling'. 'Dwelling' is a set of everyday activities performed in the dwelling unit or the residential environment. By subdividing meaning structures by type of residential environment, we can see to what extent the meaning of dwelling differs among city centre, suburban and rural types of residential environment.

Below we briefly outline the particularities of city centre, suburban and rural types of residential environment. The city centre may be characterised as a type of residential environment with a high level of amenities: these are cultural (e.g., theatre and concert halls), social (e.g., bars and restaurants) and economic facilities (e.g., highly specialised companies and institutions of higher education) (Feijten *et al.*, 2008). Because of these amenities, city centres are often characterised as action-packed places (Engelsdorp Gastelaars and Hamers, 2006). People choose to live in the city centre for its high level of facilities. Activities like going to cultural events and shopping play an important

role in the preference for living in or very near the city centre (Lindberg *et al.*, 1987). One might expect meanings belonging to the value type self-direction and stimulation to be important in the city centre. The city is regarded as an unsuitable place for raising children because of the congestion, air pollution, criminality and its large scale (Karsten *et al.*, 2006). The suburban type of residential environment has more green space and a larger single-family housing stock compared to the city centre type of residential environment (Feijten *et al.*, 2008). A suburb can be characterised as an environment for functional and comfortable living (Reijndorp *et al.*, 1998; Metaal, 2005). There, all facilities for the daily routines – like going to work, doing daily errands and taking the children to school – are well connected by roads, so they are within easy reach for the suburban resident. One might expect going out and family-life activities to be important in a suburban type of residential environment. One might also expect meanings like comfort and efficiency to be important. Finally, the qualities of the rural type of residential environment are different again compared to suburbs and especially city centres. Rural areas provide green space, nature, quietness and a substantial single-family housing stock. Because of the space, rural areas provide more possibilities to undertake space-consuming activities like keeping animals (Heins, 2002). Also activities like relaxing, outings in the countryside, being with the family and exercising are associated with living in the countryside (Lindberg *et al.*, 1987). In rural areas one can enjoy quietness and nature while having space for outdoor leisure activities. Besides, social relations are in general closer in rural areas (Feijten *et al.*, 2008). Therefore one might expect value types like hedonism and tradition to be important in a rural type of residential environment.

7.1 Conclusions regarding main research findings

This section summarises the main research findings of this study. In the first section we discuss the research questions concerning activities in the dwelling unit and the residential environment. The second section is devoted to the relation between settings, activities and meanings. Last, we describe the meaning structures, which are subdivided by type of residential environment.

7.1.1 Activities in the dwelling and residential environment

This study is focused on activities performed in the dwelling and residential environment. The research questions, discussed in Chapter four, that concern these activities are as follows:

1. *Which activities do people perform in their dwelling and residential environment?*
2. *To what extent do activity patterns exist?*
3. *To what extent do socio-demographic variables, dwelling features and residential environment features influence activities?*

Regarding the first research question, the data show that people perform a wide variety of activities in and around the dwelling. These include social activities, like entertaining guests and visiting friends, and leisure activities, like watching TV and cycling. But housekeeping is also an important part of everyday life: cooking, cleaning and doing daily errands were mentioned by more than one-third of all respondents. The various everyday activities in the dwelling and residential environment fall into categories like leisure, work and home life. Some activities belonging to these three domains form groups of activities that are differentiated from other activities.

With regard to the second research question, we used multiple correspondence analysis to find out to what extent the activities are differentiated. Multiple correspondence analysis (HOMALS) examines the profiles of diverse nominal variables, which in this case are the activities the respondents have mentioned. It compares all of the profiles in order to determine whether they are similar (homogeneous) or different. Multiple correspondence analysis can only identify groups of homogeneous activities; it does not provide information on which factors might cause differences between groups. Therefore, we also used logistic regression analysis, which allowed us to determine the extent to which single activities are affected by socio-demographic variables, type of dwelling and residential environment features.

Multiple correspondence analysis identified three groups of activities that are differentiated from other activities. First, *family-related activities* (taking the children to school and children playing) are clearly differentiated from all other activities. In addition logistic regression analysis showed that household composition affects family-related activities. So families with children (three- or more person households) perform different activities than the other respondents (one- and two- person households) in the research population. This indicates that the life course in general and the family career in particular have an effect on people's everyday activities. The data show that the majority of families with children (prefer to) live in either a suburban or a rural type of residential environment (resp. 37% and 42%). Second, *leisure activities* like going out, engaging in a hobby and going to a club are differentiated from other activities. The way people spend their leisure time is partly affected by the type of residential environment they live in. For example, city centre dwellers are more likely to have mentioned going out than people who live in a suburban or rural type of residential environment. This is what one might expect; city centres have more entertainment facilities such as cinemas, theatres and concert halls. Furthermore, as shown in Chapter three, city

centre dwellers like to have such amenities in their residential environment, more so than people who live in a suburban or rural area. In contrast, people who live in a rural type of residential environment are more likely to have mentioned going to a club. In general, local social ties are closer in rural areas (Van Dam *et al.*, 2002; Feijten *et al.*, 2008). This might be expressed by a higher share of people participating in local clubs. These outcomes indicate that people who find going out important prefer to live in a city centre type of residential environment, whereas people who are family oriented (people performing family related activities) prefer to live in a suburban and rural type of residential environment. Evidently, other factors like dwelling type or price also affect the actual housing choice (Pinkster and Van Kempen, 2002). The logistic regression analysis showed that age also has an effect on the way people spend their leisure time. People over 55 are more likely to have mentioned recreational pursuits like walking and cycling, whereas people aged 18-39 are more likely to have mentioned doing sports, for example playing football or running. Both age groups may be said to engage in active leisure activities, though young people seem to prefer sports while older people seem to prefer recreation. Third, *household chores* like cooking, cleaning and doing daily errands are differentiated from other activities. This group of activities has no obvious relation to background variables. For example, regardless of where or in what kind of household one might live, everyone needs to go out to buy groceries.

In short, the type of residential environment affects leisure and family-life activities, whereas household chores are not related to type of residential environment. Regardless where one lives, all people have mentioned equally going to work, doing daily errands, eating, doing sports or recreation. Finally, besides type of residential environment, there are other factors, like age and household composition, that affect activities performed in the dwelling and residential environment.

7.1.2 The relation between activities and meanings in different sub-settings

Having distinguished the activities, we can assemble the meaning structures. Meaning structures connect (1) the activities in the dwelling and residential environment to (2) the sub-setting in which these activities take place (e.g., eating in the living room) and (3) the meanings people attach to these activities (e.g., eating and sharing). Together, these three elements – the sub-setting (living room), activity (eating) and meaning (sharing things together) – form a meaning structure.

The fourth research question concerns the relation between meanings and activities:

Table 7.1 General meanings contributing significantly to explaining activities

Activity	General meaning
Taking the children to school	Safety
Doing sports	Health
Gardening	Keeping busy
Visiting friends	Sharing things together
	Social contacts
Going out	Getting away from things
Entertaining guests	Sharing things together
Cooking	Space

4. *To what extent do general meanings influence activities, also controlling for socio-demographic variables, dwelling and residential environment features?*

An important assumption in the conceptual framework is that behaviour is value-oriented and goal-directed. Thus, we assume that general meanings affect activities. To answer this research question, we repeated the logistic regression analyses presented in Chapter four, although this time we added general meanings to the analyses. As described in Chapter five, general meanings are meanings that have been mentioned for several activities; some examples are *relaxation, pleasure* and *peace and quiet*. These general meanings were included in the logistic regression models with activities as the dependent variables. For almost all activities, one or more general meanings turned out to be significant predictors. The general meanings that showed up as significant predictors of an activity may be regarded as significant motivators of that activity. For the activity taking the children to school, *safety* is very important. People find it important to have a safe route to travel when they take their children to school. Furthermore, the analyses showed that *health* is important for doing sports. In other words, staying healthy is an important motivator for doing sports. *Keeping busy* is important for gardening. Most people enjoy gardening; they consider it a nice way to keep busy. For entertaining guests and visiting friends *sharing things together* is important. Going out is seen as a diversion; people like to *get away* from the day-to-day cares. Overall, models including general meanings along with socio-demographic variables, the type of dwelling and features of the residential environment, predict activities better than the same models without them. Thus, we can conclude that general meanings contribute positively to the prediction of the performed activities. The following models showed the greatest improvement in explained variance when adding general meanings: taking the children to school, doing sports, gardening, going out, visiting friends and entertaining guests (these are summarised in Table 7.1).

The fifth research question concerns groups of meanings:

5. *To what extent do different orientations of general meanings exist for different groups of people subdivided by type of residential environment, age and household composition?*

The logistic regression models presented in Chapter four showed that type of residential environment, age and household composition are important predictors of activities. Through correspondence analysis, we tried to ascertain the extent to which groups of people (defined by type of residential environment, age and household composition) have different orientations of general meanings. For example, did city centre dwellers mention different meanings than people who live in a rural type of residential environment? Based on the literature, one might expect meanings like *finding amusement* (Lindberg *et al*., 1987) to be more important to city centre dwellers and *peace and quiet* (Heins, 2002) to be more important to people who live in a rural type of residential environment. When interpreting orientations of general meanings, one should keep in mind that general meanings are related to activities. That is why we also take into account the activities to which the general meanings are linked. Here we only look at the orientation of general meanings for people subdivided by type of residential environment, because that is the focus of this research. The orientations of general meanings for different age and household groups can be found in Chapter five.

Firstly, the results show that the general meanings *getting away from things, space* and *saving time* are associated with a city centre type of residential environment. In previous analyses, a relation between the general meaning *getting away from things* and the activity going out was observed. And city centre dwellers are three times more likely to have mentioned going out than people living in a suburban or rural type of residential environment. Also, the city is described in the literature as a place full of opportunities to go out and find entertainment (Burgers and Van der Land, 1997). Besides, people who live in the city centre use 'urban facilities' like theatres, restaurants and bars more than people living in suburban areas (Naess, 2006). The analyses revealed that *space* is a significant predictor of the activity cooking. This activity was mentioned relatively most by city centre dwellers. Other than that, there is no obvious explanation for the association between space and city centre. Finally, the general meaning *saving time* is associated with a city centre type of residential environment. There are numerous facilities for work, education and leisure in city centres. Because of their high concentration of amenities people are able to perform many different activities there in a relative short time span. One might argue that those who find it important to combine many activities would prefer to live in a city centre type of residential environment.

Secondly, the general meanings *nature* and *necessity* are associated with a suburban type of residential environment. For the general meaning nature, the activities recreation and being outside contribute most to the association with a suburban type of residential environment. One might argue that people who choose to live in a city centre are well aware of the consequence: a scarcity of green space. In contrast, people who choose to live in a rural type of residential environment might take the relatively large amount of green

space for granted. For this reason, they may not express a need for green space or to experience nature; their needs can be amply met there. Yet people who choose to live in a suburban area seem to find nature important, and they do not take green space in the residential environment for granted. The association between *necessity* and a suburban type of residential environment runs mainly through the activity gardening; suburbanites mentioned necessity as a meaning for gardening most frequently. Remarkably, none of the city centre dwellers mentioned gardening as a necessity. Unlike city centre dwellers, who apparently enjoy it, a considerable share of suburbanites consider gardening a chore. Relatively few dwellings in a city centre type of residential environment have a garden, but most do in a suburban or rural area. So a possible explanation for the different meanings behind the same activity might be that people who live in a city centre consciously choose to live in a dwelling with a garden, whereas people in a suburban type of residential environment take the dwelling feature garden for granted. As a result, people might enjoy having a garden to sit and relax in, but clearly not all suburbanites enjoy keeping it up.

Thirdly, the general meanings *peace and quiet*, *keeping busy* and *safety* are associated with a rural type of residential environment. Figure 6.27 (people's main reason for their preference of a rural type of residential environment) showed that *peace and quiet* is an important factor in people's preference for a rural type of residential environment. The logistic regression models including general meanings showed that *keeping busy* is an important general meaning for the activity gardening. Gardening was mentioned most by people living in a rural type of residential environment. People who prefer to live in a rural type of residential environment value green space highly (Van Dam *et al.*, 2002). Having a garden might facilitate this preference. The general meaning *safety* is a significant predictor of the family-related activity taking the children to school. Safety is not only associated with a rural type of residential environment, but also with household composition (three- or more person households) and age (18-54). These associations show that for families with young children, safety is important. The literature shows that safety is a factor that people (especially families with children) take into account in their housing choice. Several authors have found that one of the reasons people move out of city centres to suburban or rural areas is that they feel that city centres are not safe (e.g., Karsten *et al.*, 2006; Heins, 2002). The preference for a suburban and especially a rural type of residential environment among families with young children is evident from our survey.

Regardless of which type of residential environment people live in, all people have a need to forget about work (*take a break from work*), *relax*, enjoy life (*pleasure*) and meet friends (*social contacts*). Also, regardless of the type of residential environment, people find it important to have shops for daily errands *close by*; the general meaning *convenience* is mentioned most in relation to the

Table 7.2 Association between type of residential environment and general meanings

City centre	Suburban	Rural
Space	Nature	Peace and quiet
Getting away from things	Necessity	Keeping busy
Saving time		Safety
Similarities:		
Break from work, pleasure, convenience, relaxation, social contacts		

activity daily errands. So, according to this analysis, the three types of residential environment are associated with a slight difference in value orientation, with regard to activities in the dwelling and residential environment. Table 7.2 summarises the differences and similarities in general meanings among a city centre, suburban and rural type of residential environment.

The following research question deals with the entire meaning structure: the relation between activities and meanings in all sub-settings of the dwelling.
6. What are the most mentioned meanings for activities in the dwelling?

In order to present the most frequently mentioned meanings for activities in the dwelling in a single overview, we have combined the meaning structures of the different sub-settings. These are the kitchen, living room, study and private outdoor space (garden or balcony). Aggregating all meaning structures into one network generates what we call a meta-network. First, the meta-network of all activities performed in the dwelling (Figure 5.11) clearly shows that the dwelling is a *place for relationships with family and friends* (value type benevolence). For example, eating together with family or friends is an important activity in the dwelling. All rooms in the dwelling, except the study, are used for being together with family or friends. Spending time together, talking the school day through with the children or just catching up with friends (whether on the internet, on the phone or in person) are all activities that people carry out on a daily basis in their dwelling. Second, the dwelling is a *place for leisure activities*. Many people said they watch TV, read, and listen to music in their dwelling. In fact, the most frequently mentioned meaning for the dwelling is relaxation; the dwelling is a place where people can find peace and quiet (value type hedonism). Third, the dwelling is a *refuge from the outside world*, a place where people can do (more or less) what they want and forget about work (value type self-direction and stimulation). This is related to the home as a centre of leisure activities; people don't need to justify to others what they do in their house.

The next research question concerns the relation between activities in the residential environment and the meanings attached to those activities.
7. What are the most mentioned meanings for activities in the residential environment?

To create the meta-network of all activities in the residential environment (Figure 5.15), we again aggregated all activities performed in the residential environment and their most frequently mentioned meanings. The residen-

Table 7.3 Most mentioned meanings of dwelling

Activities in the dwelling	a place for relationships with family and friends (value type benevolence)
	a place for leisure activities (value type hedonism)
	a refuge from the outside world (value type self-direction and simulation)
Activities in the residential environment	a functional space (value type self-direction and security)
	a place for social leisure activities (value type benevolence)
	a place for active leisure activities (value type stimulation and security)
	a place for passive leisure activities (value type hedonism)

tial environment is a *functional space*; a person needs to do daily errands, go to work or take the children to school. Because one needs to do these activities, functional aspects like saving time, proximity and efficiency are important (value type self-direction). For families with children, a very important meaning of the residential environment is safety: having a safe route to travel to school (value type security). The residential environment is also a *place for leisure activities*. People go out to meet friends and catch up on the news about them (value type benevolence). By going out people feel that they can forget about their job and their daily duties (value type stimulation). To stay fit and healthy (value type security) people do sports or go walking or cycling (activity recreation). Finally, all these leisure activities give people an opportunity to relax and enjoy life (value type hedonism). Table 7.3 summarises the most mentioned meanings for activities in the dwelling and residential environment.

7.1.3 Meaning structures subdivided by type of residential environment

This study attempts to draw some conclusions about the effect that the type of residential environment has on the meaning of dwelling. This section summarises per sub-setting of the dwelling and residential environment the similarities and differences in the relation between activities and meanings across the three types of residential environment.

The final research question addressed in this thesis is:
8. To what extent do meaning structures differ per type of residential environment?

Living room
Regardless of the type of residential environment, the living room is a place where people relax, eat together with family or friends and entertain guests. In all three types of residential environment the meanings *relaxation, personal development* and *social contacts* are important. Only in the city centre network is the link between working at home and *saving time* present. (In the other two networks the frequency is too low.) People who live in a city centre or a suburb mentioned eating in the living room more frequently than people living in a rural area. (We have seen that in the rural type of residential environment, eating in the kitchen was mentioned relatively more often.) The links between children playing and *sense of safety* and *personal development of the child* are only found in the suburban and rural networks. This is a consequence of the distri-

Table 7.4 Similarities and differences in activities and meanings in the living room

	Activities	Meanings
Similarities	- Relaxing	- Relaxation, personal development
	- Being together with family and friends	- Social contacts
City centre	- Work at home	- Saving time
Suburban	- Hobby	- Creativity
	- Children playing	- Sense of safety, personal development of the child
Rural	- Children playing	- Sense of safety, personal development of the child

Table 7.5 Similarities and differences in activities and meanings in the kitchen

	Activities	Meanings
Similarities	- Cooking	- Space, convenience, comfort
	- Eating	- Eating together with friends/family
City centre	- Cooking	- Space, sharing things together
Suburban	- Cooking	- Convenience, saving time
Rural	- Be together with the nuclear family	- Time for one another
	- Eating together	- Health

bution of households over the types of residential environment; the city centre has the lowest number of families with children. Finally, the link between hobby and *creativity* is only present in the suburban network. Table 7.4 summarises similarities and differences in activities and meanings in the living room.

Kitchen

In all three types of residential environment people cook in the kitchen. Obviously, functional aspects are important for cooking. The meanings *space, convenience* and *comfort* are all important and interrelated. But the meaning *eating together*, either with family or friends, is another important function of the kitchen. The link between the meaning *convenience* and *saving time* is only present in the suburban and city centre networks. In the city centre network, there is a unique link between the meaning *space* and *sharing things together*. This might indicate that space is a prerequisite for inviting friends over to eat. In the rural network, there is a unique link between the meaning *eating together* and *health*. This might indicate that people in rural types of residential environment are more health-conscious. Because the activity eating occurs relatively more in the rural network of the kitchen, the meaning *having time for one another* is only present in the rural network. In contrast, in the city centre and suburban networks, this social function of eating together with others is best represented in the living room. Table 7.5 summarises similarities and differences in activities and meanings in the kitchen.

Study

In all three types of residential environment, the study is a place where people use their computer. It provides them with *access to information*, but it is

Table 7.6 Similarities and differences in activities and meanings in the study

	Activities	Meanings
Similarities	Being at the computer	Access to information, social contacts
City centre	Work at home	Saving time, doing what you want, work concentrated
Suburban	Hobby	Creativity
Rural	-	-

Table 7.7 Similarities and differences in activities and meanings in the private outdoor space

	Activities	Meanings
Similarities	- Gardening, being outside	- Relaxation, keeping busy, pleasure, nature, peace and quiet
City centre	- Entertaining guests	- Social contacts
	- Being outside	- Sense of freedom, sense of space
Suburban	- Gardening	- Garden looks beautiful, necessity
Rural	- Children playing	- Sense of safety, personal development child
	- Gardening	- Necessity

also used to keep in touch with friends and family (social contacts). Besides providing a place to work at home, the study is also used as a hobby room, for example to do handicrafts or play a musical instrument. Working at home was mentioned most by city centre dwellers. As a consequence, working at home is related to many different meanings; for example, it is linked to *saving time, doing what you want* and *working concentratedly*. In the city centre, people emphasise its use to work at home and working concentratedly. In contrast the emphasis in the suburban and rural networks is on using the study as a hobby room: a place to exercise creativity. Table 7.6 summarises similarities and differences in activities and meanings in the study.

Private outdoor space

The most frequently mentioned activities assigned to the private outdoor space are gardening and being outside. The most frequently mentioned meanings are *relaxation, keeping busy* and *pleasure*. Yet another important meaning of the private outdoor space is *nature*. Only in the suburban and rural types of residential environment did people mention *necessity*. This indicates that people who live in a city centre do not see gardening as a chore, whereas some people who live in a suburb or rural area do (this was also found in the orientations of general meanings in research question 5). The activity entertaining guests occurs most in a city centre type of residential environment, where it is connected to the meanings social contacts and *sharing things together*. Only in the rural network is the activity children playing connected to the meanings *sense of safety, personal development of the child* and *pleasure*. This reflects the finding that, generally speaking, families with children prefer to live in a suburban or rural type of residential environment. Table 7.7 summarises similarities and differences in activities and meanings in the private outdoor space.

Activities in the residential environment

With respect to daily errands and commuting, functional aspects like *saving time, having shops close by* and *having good quality products* are important regardless of the type of residential environment. These activities and meanings form the functional dimension of the residential environment. For going out and visiting friends, having *social contacts* is an important meaning. These activities and their associated meaning refer to the social dimension of the residential environment. In all three types of residential environment, there is a link between the activity sports and the meaning *health*. And in all three networks, there is a link between the activity going out and the meaning *relaxation*. These activities and meanings show that the residential environment, like the dwelling, is a place to relax. In the city centre, people mentioned taking children to school so seldom that this function is not included in the networks of activities in the residential environment. In the suburban and rural networks, the activity taking the children to school is connected to the meaning *safety*, which is a dominant link in both networks. In the suburban network, there is a link between the activity recreation and the meaning *nature*. This link does not occur in the other two networks. In the city centre network, going out is relatively important (this function has a high frequency and is connected to many meanings). The meanings *break from work* and *get away from things* are only present in the city centre network. In all three networks, going out is connected to *relaxation* (hedonism) and *social contacts* (benevolence). In the city centre, there is an additional value type; stimulation, represented by the meanings *getting away from things* and *taking a break from work*. In the rural network, going out, going to a club and visiting friends are all connected to the same meanings: *social contacts, sharing things together* and *enjoyable*. This clearly differentiates these leisure activities from the city centre network in particular; in the city centre, the emphasis is on stimulation. In the rural network, in contrast, the emphasis is on benevolence. This suggests that in the city centre, the meanings of going out are not only more diverse but also different than in a suburban or rural type of residential environment. Table 7.8 summarises similarities and differences in activities and meanings in the residential environment.

Summarising, to what extent do meaning structures differ per type of residential environment? The meaning structures subdivided by type of residential environment are similar in that both the dwelling and the residential environment are a place to *relax and enjoy life*. Also the social dimension is important in all three types of residential environment. Everyone sees the dwelling and the residential environment as a place to *be together with friends or family*, *sharing things together*. This indicates the importance of social interaction in the process of assigning meaning to the dwelling and the residential environment. And in all three types of residential environment, both the dwelling and the residential environment must be functional so they can sup-

Table 7.8 Similarities and differences in activities and meanings in the residential environment

	Activities	Meanings
Similarities	- Daily errands	- Close by, convenience, good quality products, freedom of choice
	- Commuting	- Saving time
City centre	- Going out	- Break from work, get away from things
Suburban	- Taking the children to school	- Safety
	- Recreation	- Nature
Rural	- Taking the children to school	- Safety

port people's daily activities. This functionality is best represented by the meanings *space, close by* and *convenience*.

The city centre differentiates with respect to amenities, represented by the activity going out and meanings belonging to the value type *stimulation*. Other differences lie in the use of the private outdoor space. People who live in a city centre use their private outdoor space most for being outside and relaxing. Another activity in the private outdoor space that is important to for city centre dwellers is entertaining guests. These functions are found in the suburban and rural networks. But in those networks most emphasis is put on gardening, which is connected to *keeping busy*. The private outdoor space in a suburban area has somewhat contradictory meanings: on the one hand, *nature* shows that people prefer to live in a green environment; on the other hand, *necessity* shows that people do not want to deal with the maintenance. The activities children playing and taking the children to school and the meanings *sense of safety* and *personal development of the child* are important in a suburban and especially in a rural type of residential environment. In general, families with children prefer to live in a suburban or rural type of residential environment (e.g., Karsten *et al.*, 2006; Feijten *et al.*, 2008). So besides the type of residential environment, household composition is also an important factor in differentiating meaning structures.

7.2 Evaluating the residential environment typology

The analysis of the meaning structures revealed that the type of residential environment affects activities and meanings to some extent. The type of residential environment does affect some leisure activities (e.g., going out, gardening) and family-life activities (e.g., taking the children to school, children playing). These results confirm more or less what one might expect to find based on the characterisation of the three types of residential environment, although the differences are less far-reaching than some of the literature on life in city centre, suburban and rural types of residential environment would suggest. This brings up a fundamental issue: Does the type of residential environment matter? To answer this question, we first refer to the motivations underlying people's preference for either a city centre, suburban or rural type of residential environment. We then consider the particularities of this study. Finally, we consider some recently published studies that look into people's

housing preferences (including their preferred type of residential environment) from different perspectives (i.e., work career and family career).

7.2.1 Motivations behind preference for a type of residential environment

The meaning structures of the main reason for the preference for type of residential environment reflect rather well the particularities of type of residential environment. There is a statistically significant difference in the first reason why people want to live in a city centre, suburban or rural type of residential environment. Over 50 per cent of all respondents who prefer to live in a city centre type of residential environment mentioned the accessibility of amenities as the first reason. Besides, logistic regression analysis showed that city centre dwellers are more likely to have mentioned going out than people living in a suburban or rural type of residential environment. Related to going out, the meanings *getting away from things* and *stimulation* were mentioned most frequently by city centre dwellers. The literature refers to this as the city as a place to get entertained (Burgers and Van der Land, 1997) and meanings such as an exiting life (Lindberg *et al.*, 1987). The most important reason to prefer a suburban type of residential environment has two aspects: on the one hand peace and quiet, on the other hand the accessibility of amenities. This duality seems to reflect the idea that a suburban type of residential environment offers the 'best of both worlds' (Metaal *et al.*, 2008). The suburbs have a high share of single-family dwellings in a green residential environment, but are close to urban facilities. This dual character is captured by the meanings *nature* and *necessity*. On the one hand people appreciate the verdant environment (nature, connected to the activities gardening and recreation) but they do not like the work of maintaining their garden (necessity, connected to the activity gardening). Project developers respond to that demand by offering dwellings with little private outdoor space, but a common green area adjacent to the dwelling. For example, a study among residents in such a dwelling project showed that people valued the view over green common space high and were glad that they did not need to maintain it (Boumeester *et al.*, 2005). For people who see gardening as a burden, but do want to live in a green residential environment, these kinds of concepts might be attractive. Quite a substantial number of people, especially in suburban types of residential environments seem to belong to this group. This indicates that there is room for a new balance between private and public green space, especially in suburban areas. Finally, people who would rather live in a rural type of residential environment gave diverse reasons for their preference; the main ones are peace and quiet, social contacts, tradition and character of the residential environment. The meanings *keeping busy* (related to gardening), *safety* (related to taking children to school) and *peace and quiet* (related to many different activities)

are associated with rural living. Keeping busy is strongly related to the activity gardening; which was mentioned most by those, who live in a rural area. Safety is related to family-life activities; in general, people with children prefer to live in a suburban or rural type of residential environment (e.g., Karsten *et al.*, 2006). The rural image is clearly associated with peace and quiet (Heins, 2002; Feijten *et al.*, 2008).

Because most studies focus on the particularities of a certain type of residential environment, or focus on the differences between them, there is little attention for the similarities between activities performed in a city centre, suburban and rural type of residential environment. The meaning structure approach shows which activities and meanings differ among type of residential environment, but it also clearly demonstrates that there are a considerable number of everyday activities and meanings that don't differ.

7.2.2 Remarks on the research design

Type of residential environment seems to affect some leisure and family-life activities and meanings. Still, many activities and meanings are similar. The similarities might partly be explained by the specific context of this study. First, this study is focused on everyday activities. In that respect, we would not expect to find many differences among the residential environments. People everywhere need to buy groceries, eat and go to work, for instance. Shifting the focus to exceptional activities might have led to a wider variety. Still, one could argue that the effect of everyday activities (performed frequently and regularly) have more influence on life in a city centre, suburb or rural area. Exceptional activities might differentiate more, but because they only take place a few times a year, they will have less impact on people's everyday lives. Besides, these sporadic activities will probably also affect the housing choices people make to a lesser extent (Naess, 2006). Second, the type of residential environment should be seen in context. As noted earlier (in Chapter four), the distances one would travel to reach urban facilities are limited in the Netherlands, especially in the Randstad region. The Netherlands is a small country with a high building density. Thus, many facilities can be found within a short distance of the home. There are few places in the Netherlands where one does not have access to an urban region and urban facilities within one hour of travel time. Vice versa, within one hour one can be in a green recreational area. Even though the three types of residential environments have different characteristics, the distances between them are rather short. Finally, the sample is rather homogenous. As explained in Chapter three, this is probably the result of the income criteria used in the housing preference survey (HPS). A possible result might be that the effect of for example income on activities, as found in the logistic regression models, is less strong in a homogenous group than it would be in a more heterogeneous sample.

7.2.3 Recent studies on the relation between work and family activities and the type of residential environment

After placing these comments explaining the possible causes of the similarities in activities and meanings among the three types of residential environment, we focus once more on differences between activities and meaning among the three types of residential environment. The results show that the type of residential environment affects to some extent leisure and family-life activities and the meanings attached to those activities. Generally speaking, one can say that different life domains, like work, family and leisure, have an effect on the way people use their dwelling and residential environment (Van Diepen and Arnoldus, 2003). Moreover, the way people balance the different life domains seems to have an effect on their choice of a type of residential environment. As stated in the literature, but also evident from this study, families with children generally prefer to live in a suburban and especially a rural type of residential environment (Heins, 2002; Karsten, 2007; Feijten *et al.*, 2008). As demonstrated by the meaning structures, people with children put a high value on safety. In the dwelling, this is mostly effectuated by the living room and garden, which are perceived as safe places for children to play and learn. In the residential environment, this becomes clear through the meaning having a safe route to travel to school. Families with children who prefer to live in the city centre seem to put more weight on the work domain, compared to people who prefer to live in a suburban or rural type of residential environment (De Graaff and Karsten, 2007). Regarding families with children living in the city centre, De Graaff and Karsten found that both partners worked four to five days a week. Yet they found that among most families with children who moved to a suburban type of residential environment, one of the partners (usually the woman) worked fewer than four days a week. People who chose to live in a suburban type of residential environment appreciated having a dwelling with more space and a more child-friendly residential environment. Because the distances they had to travel became somewhat longer (for either work or daily errands), one of the partners chose to work fewer hours (De Graaff and Karsten, 2007). In contrast, families with children in the city centre stated that the high level of facilities allowed them to combine work, leisure, childcare and social contacts (Karsten, 2007). This indicates that people have different options and different strategies to balance the life domains of residence, work and family. In that balancing act, the type of residential environment plays a role to some extent through its features that provide opportunities and constraints.

Keeping the domains in balance seems to be getting more difficult. For example, through increased mobility, people have more choices of where to live. Moreover, thanks to advances in ICT, more and more people can work

from home. The data show that many people use their computer to gain access to information. This may be for leisure purposes such as playing games, but it may also be for learning new things or working at home. Access to the internet is widespread; 88 per cent of all Dutch households have a connection (CBS, 2006). Working at home can be a strategy to overcome a long commuting distance. According to Muhammad *et al.* (2007), housing preference is best explained by traditional variables like household composition and income. Still, they found that telecommuters are more likely to prefer a green suburban or rural type of residential environment (Muhammad *et al.*, 2007).

Another development that confronts households with increasingly complex decision-making is the increased participation of women in the labour market. As a consequence, multiple careers need to be managed simultaneously within a household. This might result in non-standard solutions for balancing all these different domains (Van der Klis and Mulder, 2008). A couple might decide to obtain a dwelling close to the work of one partner while the other partner resides in the original dwelling, thereby creating a commuter partnership. Most couples who opt for this solution see it as temporary (Van der Klis and Mulder, 2008). Even so, it suggests that through the increasing pressure on individuals to participate fully in several life domains, people need different geographical solutions. Yet a more or less fixed dwelling seems to remain an important consideration. These findings, along with the two previous studies by Muhammad *et al.* (2007) and Van der Klis and Mulder (2008), show that people generally do not want to move to an entirely different type of residential environment; they seem attached to what they have now. In addition to that more or less fixed home base, people will 'shop around' for their leisure pastime or work. The city centre is differentiated from the other types of residential environment by the accessibility of amenities. The suburb is differentiated because it combines a quiet residential environment with proximity to urban facilities. And a rural area seems to be unique in offering peace and quiet as well as community spirit. One might expect that people who are 'shopping around' for their leisure pastime or work will look for those qualities. For example, more and more of those who reside in a rural area will go to the city on a regular basis for the theatre or festivals. Likewise, the city centre dweller will go for a walk in the woods every weekend in search of peace and quiet and to enjoy nature. As a result of such compensatory behaviour, the type of residential environment will have a less direct effect on activities in the future. Even though solutions like telecommuting and commuter partnership might only pertain to a small group of people (mainly those with a high income), the number of people who will look for a non-standard solution to combine different careers is likely to grow in the future.

A last point concerning type of residential environment should be made. As we concluded above (in Chapter three) people are creatures of habit when it comes to their preference for a type of residential environment. For most, the

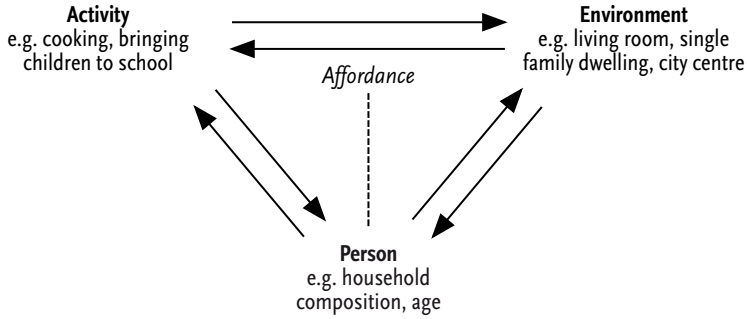
preferred type is the same as their current type. This is supported by the findings of Feijten *et al.* (2008). In a study after the relation between residential environment experience and choice of residential environment, they found that people tend to return to places where they lived before. More specific, one's place of birth plays a decisive role in the type of residential environment a person will choose (Feijten *et al.*, 2008). Another study concluded that, even though many of the factors affecting housing preferences will change in the coming 25 years (for example, the trend towards an ageing population, decreasing household size, higher educational levels and increased mobility), these developments will not affect the choice of the type of residential environment. The distribution of people over 55 across the types of residential environment will remain more or less the same for the coming 25 years (Hooimeijer, 2007). So even though the balance between work and family life is changing, all these results suggest that the type of residential environment will have less effect on activities in the future.

In sum, does type of residential environment matter? It should be kept in mind that this study only concerns activities. Obviously, other factors – for instance, status, place attachment, living close to relatives or friends – are also important in the preference for a certain type of residential environment (e.g., Feijten *et al.*, 2008; Pinkster and Van Kempen, 2002; De Wijs-Mulkens, 1999). Still, there are signs that the direct effect of the type of residential environment on activities and meanings will diminish in the future. First, there is a rather large share of everyday activities that are not affected by the type of residential environment. Second, the activities that are affected are becoming more accessible; through increased mobility and advances in ICT, people can more easily 'shop around' for their leisure pastime and work. Third, people need to balance multiple careers simultaneously. Recent studies indicate that although people will look for temporary solutions, they will retain a general preference for a green residential environment (either suburban or rural) (Muhammad *et al.*, 2007; Van der Klis and Mulder, 2008). From an activity point of view, the choice for a certain type of residential environment might become less compelling in the future, and different types of residential environment might become more interchangeable.

7.3 Evaluating the research method

In this section, we evaluate the research method by comparing the middle-out approach (focus on activities) with the bottom-up approach (focus on features). These are two different approaches, derived from the conceptual framework, which is developed in the companion study by Coolen (2008). Coolen based his framework on three theories. The first is means-end theory, which describes the relationship between consumers and goods (see Gut-

Figure 7.1 Conceptual framework: interrelation between people and their environment

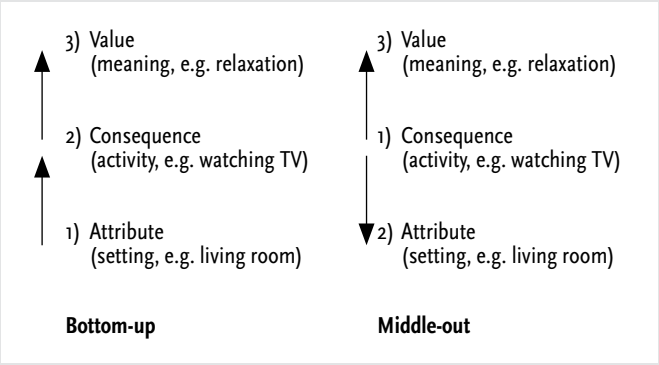


man, 1982; Reynolds and Gutman, 1988). The second is the conceptualisation of the meaning of the built environment developed by Rapoport (1982, 1990, 1995, 2001), which describes people-environment interactions as reciprocal relations and characterises the environment as a system of settings in which activities take place. The third is the theory of affordances (Gibson, 1979), which can be defined as the relation between activities of people and features of the environment (Chemero, 2003). Coolen's study is concerned with the meaning of preferences for dwelling features (Coolen, 2008). The present study, in contrast, is concerned with activities in the dwelling and residential environment.

The conceptual framework (depicted in Figure 7.1) for the interrelation between people and their residential environment contains three kinds of meanings. The arrows in between person, activity and environment represent these three kinds of meanings. The first is the meaning derived from activities that are performed in a specific feature: this kind of meaning is called affordance. For example, sitting in the sun on the balcony affords pleasure. The second is the meaning attached to activities. For example, eating together with friends means that people can catch up and share things together. The third is the meaning attached to features. For example, having a garden gives people the enjoyment of nature. Because the relation between people and their environment is a reciprocal one, the meanings attached to either activities or features should not be considered separately. All meanings are related and can to some extent be overlapping.

The means-end chain focuses on products people choose (in our case dwelling features) in order to reach desired end states; so the starting point of the laddering interviews are dwelling features. This can be understood as a bottom-up approach (see Figure 7.2). Coolen (2008) examined people's motivations for their preferred dwelling features; for that purpose he used the bottom-up approach. The present study is focused on activities whereby the dwelling is regarded as a centre of activities. An important assumption underpinning the conceptual framework is that people's behaviour is goal-directed and value-oriented. So by examining which activities people perform in their dwelling and residential environment and why these activities are important to them, we can gain insight into the meaning of dwelling. This approach is

Figure 7.2 Bottom-up versus middle-out approach in laddering



closely related to what Pieters *et al.* (1995) called a goal structure, which is an alternative to the bottom-up approach in laddering. The starting point is what people want to do in their dwelling. Then the interviewer asks where people perform the activity and why that activity is important to them. This can be characterised as a middle-out approach. Using that allows the researcher to interpret the meaning of people's behaviour (see Pieters *et al.*, 1995). This corresponds to one of the main assumption of the conceptual framework: meaning lies in the relation between people's activities and features of the environment (see Chemero, 2003). Figure 7.2 represents both approaches.

7.3.1 Meaning structure of the dwelling feature living room

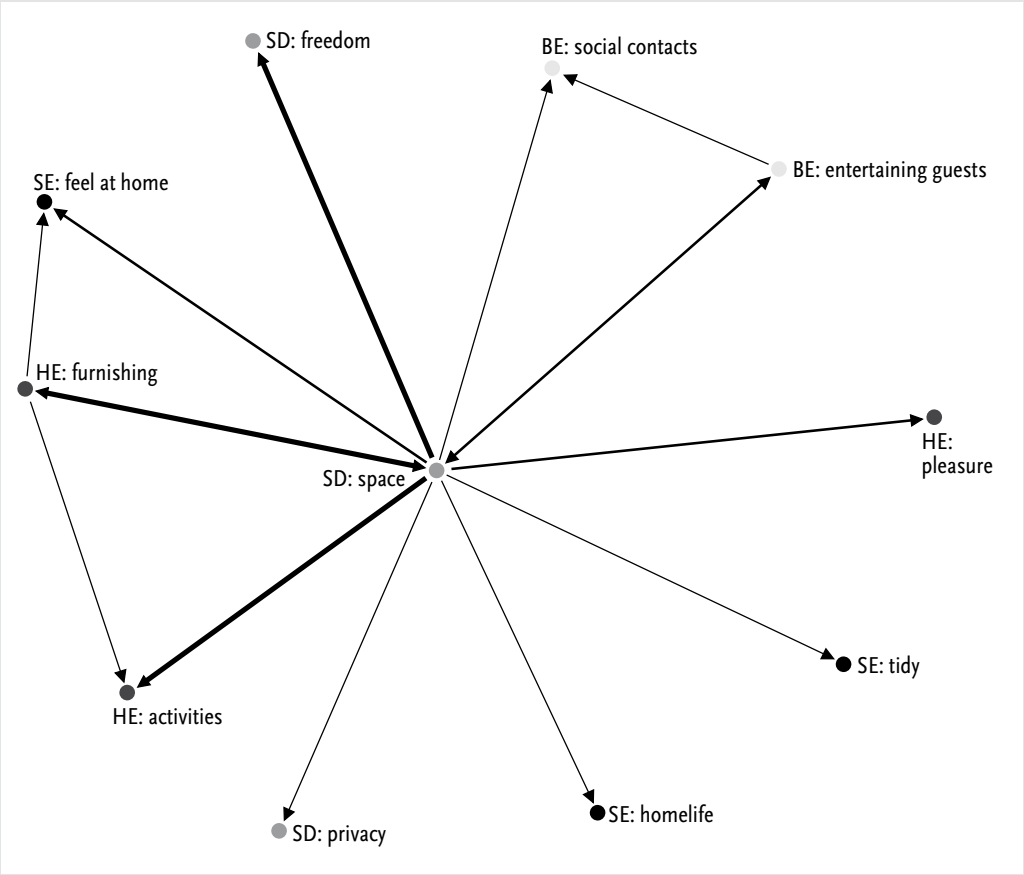
The aim of this subsection is to demonstrate the interplay of activities and dwelling features in the meaning of dwelling. To that end we present a meaning structure for the dwelling feature called size of the living room (Coolen, 2008) and compare this with the meaning structure for activities performed in the living room, as presented in Chapter five. The meaning structure for the size of the living room was created by first asking about the preferred level for this attribute. For example, the respondent would say "I want a living room of 40 square metres." The respondent was then asked "Why would you prefer to have a living room of 40 square metres?" Finally the respondent was asked "Why is >reason given in previous question< important to you?" This sequence of questions resulted in the network representation shown in Figure 7.3. To compare both approaches we repeat the meaning structure for activities performed in the living room in Figure 7.4.

Table 7.9 Key features of the meaning structure for the size of the living room (cut-off level >5)

	Dwelling feature size of the living room
Most mentioned link	Space-activities (n=109)
	Space-furnishing (n=69)
	Space-freedom (n=54)
Nrm out-degree	Space (100)
	Furnishing (30)
	Entertaining guests (20)
Nrm in-degree	Space (20)
	Activities (20)
	Feel at home (20)
	Social contacts (20)

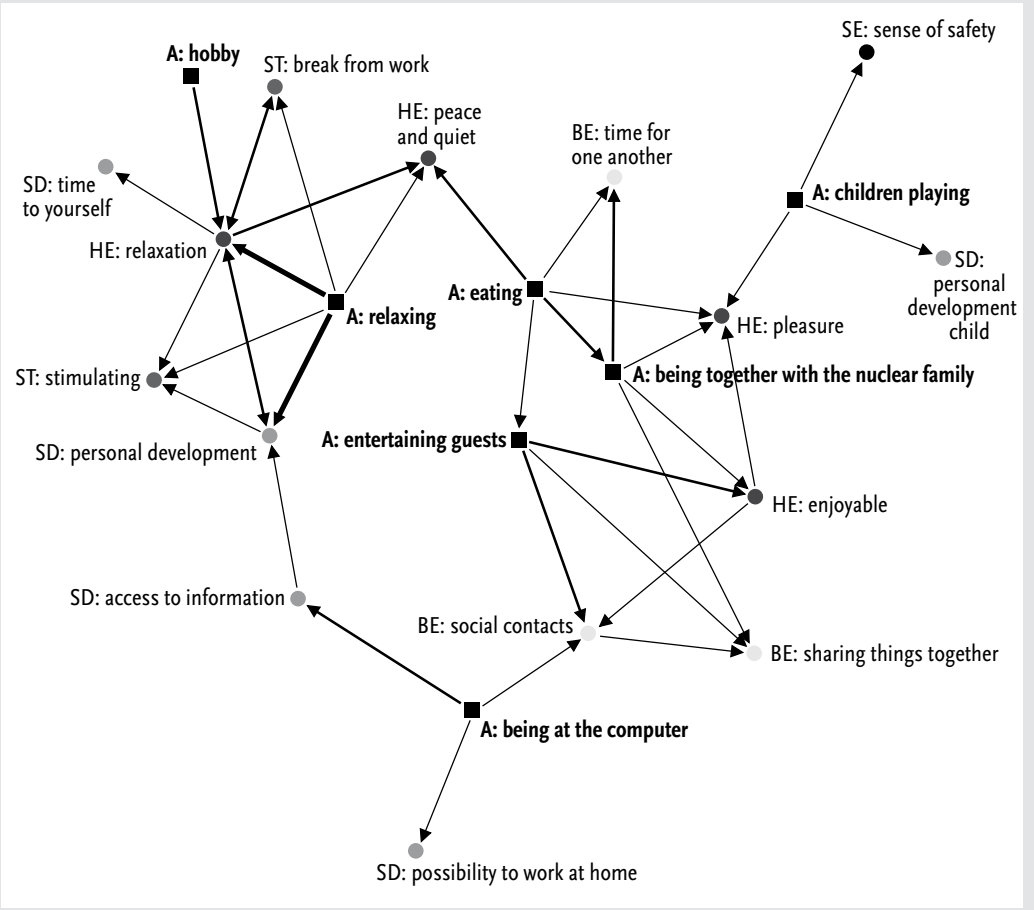
The meaning structure for

Figure 7.3 Network representation of the meaning structure for the dwelling feature size of living room (cut-off level >5)



the dwelling feature size of the living room takes the shape of a nearly perfect star, with *space* as the most central meaning. Space sends to all other meanings attached to this dwelling feature. A dominant link in the network is that between space and activities; over 100 people mentioned this link (see Table 7.9). Apparently, space is a prerequisite for activities; having sufficient space allows people to perform various activities in the living room. Besides, space makes people *feel free* and gives them a sense of *privacy* (value type self-direction). Although these meanings were mentioned for activities in the living room, they do not occur in the meaning structure for activities performed there; the frequencies are too low. As in the meaning structure for activities in the living room, the activity *entertaining guests* is connected to the meaning *social contacts* (value type benevolence). The living room is a place to meet friends. Furthermore the living room is an important place to be together with the nuclear family. In the meaning structure for the size of the living room, this is shown by the link between space and the meaning *home life* (value type security). Rapoport points out that fixed feature elements (e.g., living room), semi-fixed feature elements (e.g., furnishings) and non-fixed feature

Figure 7.4 Meaning structure for activities in the living room (cut-off level >10)



elements (e.g., photos and people present in the living room) allow people to create a sense of being at home (Rapoport, 1995). This is represented by the links among *space, furnishing* and *feel at home*. In other words, having sufficient space for a certain furniture arrangement makes people feel at home. The meaning *tidy* implies that people want to have a clean house. Tidiness is not present in the meaning structure for activities in the living room. Cleaning is an activity that is performed in the entire dwelling and cannot be assigned to one specific room. A sense of tidiness is an important meaning for the activity cleaning. The meanings *access to information* and *personal development* (value type self-direction) only occur in the meaning structure for activities in the living room. These functions are related to being at the computer and relaxing. The meaning of the living room as a place to relax and learn becomes more apparent through these activities than through the feature itself. To a lesser extent this is also true for the activity children playing and the meanings *sense of safety* and *personal development of the child*. These functions might be present in the meaning home life in the meaning structure for size of the living room.

7.3.2 Comparing meaning structures for activities in the living room and the dwelling feature living room

Regardless of whether one focuses on the dwelling feature living room or on the activities performed there, two value types seem to be important in the living room. First, for many people, it is a place to relax; the living room is a centre of passive leisure activities. These activities afford meanings that fall under the value type hedonism: taking it easy and enjoying the good things in life. Second, the living room is a place for family life and social contacts. Spending time with family and friends allows people to keep in touch, show interest in one another and enjoy their company. The living room as a place for family life falls under the value type benevolence.

There are some differences between the two approaches. Focusing on dwelling features instead of activities brings up different meanings. For example, in the network focused on the size of the living room, the meaning space affords tidiness. Tidiness is not mentioned as a meaning for any of the activities in the living room. There is a very straightforward explanation for this. There is no direct link in the data between the activity cleaning and the living room because people clean everywhere in their homes. The present study is focused on activities that have been especially assigned to the living room. The link between the activity space and the meaning *freedom* has a relatively high frequency in the network for the size of the living room. Freedom is not present in the meaning structure for activities in the living room. Freedom does occur in the network for activities in the living room, but at a frequency below the cut-off level of 10. The same is true for *feeling at home, privacy* and *home life*. Both privacy and freedom belong to the value type self-direction. This value type is also present in the meaning structure for activities in the living room. However, the meanings are different. Focusing on activities, the value type self-direction consists of the living room as a place to learn new things. By using the internet or watching TV, people have access to all sorts of information, and that contributes to their personal development.

Concluding, we might say that focusing on either features or activities results in different outcomes. In other words, activities and features are not two sides of the same coin. There certainly is an overlap in meaning, especially at the level of universal value types. Hedonism and benevolence are central value types in both approaches. Still, both approaches lead to different outcomes. The most obvious difference is that of space. Whereas space is the most central meaning in the network for the size of the living room, its size does not significantly affect the activities performed there (see Appendix 13). In general, we can conclude that even though many diverse meanings do become apparent through the use of settings (i.e., activities performed in a certain setting), settings also have a meaning of its own. The meanings of

both activities and features contribute to and are necessary for a full understanding of people-environment relations.

7.4 Evaluating the meaning structure approach

In this section we evaluate the concept of meaning structures. A meaning structure comprises a set of meanings that are relevant to a given behaviour (activities in the dwelling or residential environment) or attribute (dwelling features). In other words, meaning structures contain the relations between activities and meanings in a certain setting. These relations are represented in meaning networks, which we subjected to network analysis. The next subsection briefly explains why we chose to do so. Then, in order to evaluate the concept of meaning structures, we go on to describe what we have found to be the strengths and weaknesses of the concept.

7.4.1 Why use network analyses?

One way to represent the data obtained by the laddering technique is to generate hierarchical value maps (Reynolds and Gutman, 1988). Means-end theory assumes a hierarchical relation among attributes, consequences and values. Concretely, using a product has certain consequences, which lead to certain values. For example, using hairspray keeps your hair in shape, which makes you feel beautiful. The interviewer starts by asking why a certain attribute is important to a person and subsequently asks why a consequence is important etc. A preliminary study by Coolen and Hoekstra (2001) showed that this means-end relation is not always so rigid that it will develop perfectly along the line of attribute – consequence – value. For example, the attribute garden was also directly linked to the value freedom. And in some cases the attribute garden was only be connected to a consequence, for example providing space to keep animals. In the present study, some relations are symmetrical or form loops. For example, in the network representation of the meaning structure for the kitchen (Figure 5.7), the meanings *space, comfort and convenience* form a loop (i.e., respondents have mentioned that space affords comfort, other respondents mentioned that comfort affords space). These three meanings are connected to one another by two-sided links. In the companion study, Coolen (2008) concludes that by using the laddering technique to gain insight into the meaning of dwelling, one does not have to assume a hierarchy between the categories (Coolen, 2008). In these cases, network analysis is an appropriate technique because for a network, the cases where relations are symmetrical or form loops are unproblematic (Van Rekom and Wieringa, 2007).

7.4.2 Strengths and weaknesses of network analysis

The meaning structures allow great flexibility in representing and analysing the data; the researcher can make all sorts of combinations. For example, one could easily analyse the relation between a setting and activities (see Figure 5.5; the use of dwelling). One could also make any subdivision, as we have done for the type of residential environment (Chapter six). Furthermore, one could aggregate separate meaning structures for the sake of meta-analysis. The meta-analyses represent the most frequently mentioned links for a whole group of settings. For example, they capture the relation between all settings in the dwelling and the meanings attached to those settings (Figure 5.10). So the meaning structures allow the researcher to select a given level of specificity. It could range from the highly specific – for instance, the meaning of the study in a city centre type of residential environment (Figure 6.7) – to the very general, such as the meaning of all activities performed in the residential environment (Figure 5.15).

The meaning structures offer clear insight into the relations among settings, activities and meanings. This insight refers to both the content (what dwelling means to people) and the structure (how settings, activities and meanings are related to each other). In other words, a meaning-structure approach specifies the people-environment relations. The meaning structures for activities in the dwelling and residential environment bring to light three important domains in the meaning of dwelling. These are represented by the universal value types benevolence, hedonism and self-direction. These three value types correspond to several general meanings of home (see Deprés, 1991b). Both the dwelling and the residential environment are important for being together with family or friends (meanings like *social contacts, sharing things together*). People perform many leisure activities in the dwelling and residential environment; that is where people can relax and enjoy life (meanings like *relaxation, pleasure*). Finally, it is important for people to be able to control their environment. The dwelling serves as a refuge from the outside world and a place to own (meanings like *access to information, personal development* and *convenience, close by*). Except for benevolence, these are mainly value types serving the individual interest. That outcome is probably a consequence of our questions; we asked individuals what they considered important activities in their dwelling and residential environment. As a result, value types serving the collective interest remain somewhat underexposed. Nonetheless, they are present in various meaning structures (e.g., value types security and tradition). Furthermore, focusing on the meaning of activities evidently resulted in less emphasis on meanings related to the dwelling as a built form, like home as an indicator of personal status or home as a sense of permanency and continuity.

The results of the logistic regression analyses (Chapter five) show that gen-

eral meanings do make a positive contribution to the prediction of the performed activities. Also in the companion study by Coolen (2008), the percentage explained was increased by adding meanings to the models to predict intended tenure. These findings have demonstrated that meanings do affect people's intended housing choice and the activities they perform. Moreover the present study has showed that meaning structures are a useful tool in studying people-environment relations. In general, these findings support the assumption of the theoretical framework that people's behaviour is goal-directed and value-oriented.

The networks in this thesis are directed, valued two-mode networks. They consist of a set of activities and a set of meanings. The links can run from activities to meanings and can run between meanings. The number of statistical measures for directed and valued data is limited, even more so for two-mode networks (Latapy *et al*., 2008). We used a mix of techniques and measures to analyse these networks in the best possible way. First, we used correspondence analysis to examine activity patterns and look for associations between the groups of activities and meanings and the type of residential environment, people's age and their household composition. Correspondence analysis showed that people living in city centres have a slightly different orientation toward general meanings, compared to people living in a suburban or rural type of residential environment. Second, we used Freeman's normalised in- and out-degree (see Wasserman and Faust, 1994). In order to apply these measures, the networks had to be made dichotomous. These measures showed which individual activities or meanings were influential (i.e., sending to relatively many other points in the network) or prestigious (i.e., receiving from relatively many points in the network) in the network representing all relevant activities and meanings. Third, the network representations were generated with UCINET. This program uses an algorithm to visualise valued two-mode networks in such a way that the most central node is placed at the centre of the network. In contrast, peripheral nodes are placed near the edge of the figure. Finally, we used subdivided meaning structures to discover how much the meaning of dwelling differs among people who live in a city centre, suburban or rural type of residential environment. The subdivided meaning structures required insight into the differences and similarities in the meaning of dwelling across the three types of residential environment. Take the living room, for example. People who live in the city centre tended to mention the activity entertaining guests there in connection with the meaning social contacts more, whereas people who live in a rural type of residential environment were more inclined to mention the activity children playing there in connection with personal development of the child. However, the subdivided meaning structures do not give insight into the factors that might cause the differences. From the literature, we know that many other factors lying outside the scope of this research affect the choice of residential environment

(e.g. Feijten *et al*., 2008; Pinkster and Van Kempen, 2002; De Wijs-Mulkens, 1999). Thus, the conclusions drawn here about the effect of the type of residential environment on activities and meanings have a limited scope.

7.5 Directions for future research

This study has clearly shown that meanings affect people's everyday activities in the dwelling and residential environment. The conceptual framework developed in the companion study by Coolen (2008) has proved to provide good grounds for studying the meaning of dwelling. The laddering technique was used to generate meaning structures, which have been visually depicted as meaning networks. These networks represent the relation between activities and meanings in a certain setting. As noted earlier in the discussion, some issues remain unresolved. First, the number of statistical measures for analysing directed, valued two-mode networks is very limited (Latapy *et al*., 2008). It seems worthwhile to continue exploring various techniques that also allow an analysis of directed, valued two-mode networks. A first step would be to find a suitable measure for normalised, valued in-degrees and out-degrees. Using percentages would be the most straightforward method. Another possibility might be to analyse the progress of relations in a network (taking the direction of the links into account). For example, of all links (valued) originating from the relation between watching TV and relaxation, 50 per cent run to pleasure and 10 per cent run to personal development. Of all links originating from the relation between being at the computer and relaxation, 50 per cent run to personal development and 10 per cent to pleasure. In this example, personal development is most strongly related to finding relaxation at the computer, and pleasure is most strongly related to finding relaxation by watching TV. Only looking at in-degrees and out-degrees would not differentiate these relations. Instead it would show that both pleasure and personal development are prestigious in the network. Looking at the progress of relations in networks might offer more insight into the specific connection between activities and meanings. The next step forward might be to expand the models by adding factors like socio-demographic variables and dwelling and residential environment features. This would offer more insight into the effect that socio-demographic variables, dwelling and residential environment features could have on the relation between activities and meanings. It might thereby bring us a step further on our attempt to create a causal model.

Second, continuing the research on the relation between people's housing preferences and their underlying motives would provide useful input for both policy-makers and developers. Thereby, it might narrow the gap between supply and demand. A possible way to improve the accuracy of the meaning structures would be to define the setting in more detail. That would require

not only taking the room into account, but also looking at its characteristics – for example the size or shape of the room. With respect to the private outdoor space in particular, it was apparent that shape and/or size (e.g., garden vs. balcony) affects the number and type of activities performed in a setting. It would be interesting to investigate the relation between the shape of the setting, the activities performed there and the meanings ascribed to these. An effort to specify shape, and thereby the relations among shape, use and meaning, would allow the designers to get closer to the dwellers preferences. Besides, the specification exercise might offer designers an opportunity to engage in discussion with the dwellers. It could make visible how changing a setting could impact activities and meanings. Or conversely, it could show the consequences for the setting if activities were added. A second approach might use this method to examine the meaning of dwelling for specific groups in greater depth. Few one-person households participated in the present study and as the data show, household composition does affect the meaning of dwelling. Since the number of people living in one-person households is growing, the housing market will have to take this group into account. Knowledge of their specific use and meaning of dwelling would be important information for both policy-makers and designers. Another interesting group might be people over 65. The absolute and relative number of elderly people will increase sharply over the coming 25 years (Hooimeijer, 2007). Gaining insight into the motivations behind people's living patterns – taking into consideration the way people use their dwelling and residential environment – could provide valuable input for government policies on e.g. housing and care.

References

Arias, E.G. (ed.) (1993), **The Meaning and Use of Housing, International perspectives, approaches and their applications**, Aldershot, Ashgate.

Arnold, Jeanne E., and Lang, Ursula A. (2007), Changing American home life: trends in domestic leisure and storage among middle-class families, **Journal of Family and Economic Issues, Volume 28** (1), pp. 23-48.

Bagozzi, R.P., and Dabholkar, P.A. (2000), Discursive psychology: an alternative conceptual foundation to means-end chain theory, **Psychology and Marketing, Volume 17**, pp. 535-586.

Bechtel, Robert B. (2000), Assumptions, methods, and research problems of ecological psychology, in: Wapner, Seymour, Demick, Jack, Yamamoto, Takiji, and Minami, Hirofumi (Eds.), T**heoretical Perspectives in Environment-Behavior Research: Underlying assumptions, research problems, and methodologies**, Kluwer Academic Press/Plenum Publishers, New York, pp. 61-66.

Bell, P. A., Green, T.C., Fisher, J.D., and Bauw, A. (2001), **Environmental Psychology**, Harcourt College Publisher, Orlando.

Bertholet, P. (1992), **Stedelijke woonmilieus en stedelijke woonvoorkeuren**, Publicatiereeks DGVH/DOK-rapporten 26, Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (VROM), Den Haag.

Bhatti, M. (1999), The meaning of gardens in an age of risk, in: Chapman, T., and Hockey, J. (eds.) **Ideal Homes: Social change and domestic life**, Routledge, London, pp. 181-194.

Blunt, Alison, and Dowling, Robyn (2006), **Home**, Routledge, Abingdon.

Boelhouwer, P.J. (2005), The incomplete privatization of the Dutch housing market: Exploding house prices versus falling house-building output, **Journal of Housing and the Built Environment, Volume 20**, pp. 363-378.

Borgatti, Stephen P., and Everett, Martin G. (1997), Network analysis of 2-mode data, **Social Networks, Volume 19**, pp. 243-269.

Borgatti, Stephen P., and Everett, Martin G. (2006), A graph-theoretic perspective on centrality, **Social Networks, Volume 28**, pp. 466-484.

Borgatti, Stephen P. (2005), Centrality and network flow, **Social Networks, Volume 27**, pp. 55-71.

Boumeester, H.J.F.M. (2004), **Duurdere koopwoning en wooncarrière: Een modelmatige analyse van de vraagontwikkeling aan de bovenkant van de Nederlandse koopwoningmarkt**, DUP Science, Delft.

Boumeester, H., Hoekstra, J., Meesters, J., and Coolen, H. (2005), **Woonwensen nader in kaart: De woonbeleving van bewoners**, NVB, Voorburg.

Boumeester, H.J.F.M., Lamain, C.J.M., Mariën, A.A.A., Rietdijk, N., and Nuss, F.A.H. (2006), **Huizenkopers in profiel; Onderzoek naar wensen van potentiële huizenkopers**, NVB, Voorburg.

Boumeester, Harry, Coolen, Henny, Goetgeluk, Roland, Jansen, Sylvia, and Molin, Erik (2008), **Module Consumentengedrag WoON**, Onderzoeksinstituut OTB, Delft.

Bourdieu, P. (1984), **Distinction: A social critique of the judgement of taste**, Harvard University Press, Cambridge, MA.

Bretherton, Joanne, and Pleace, Nicholas (2008), **Residents' View of New Forms of High Density Affordable Living**, Joseph Rowntree Foundation, University of York, York.

Brouwer, J., and Ruiterman, M.G.M. (1992), **Woonmilieudatabase eindrapportage: Inventarisatie, consistentie en bijhouding**, AB onderzoek, Delft.

Burgers, Jack, and Land, Marco Van der (1997), Thuis in de uitstad, in: Reijndorp, A., Kompier, V., and Haas, L. De (eds.), **Leefstijlen. Wonen in de 21e eeuw**, NAi Uitgevers, Rotterdam, pp. 123-129.

CBS, press release PB06-101, november 1, 2006, **Breedband razendsnel ingeburgerd**, Den Haag.

Chemero, Anthony (2003), An outline of a theory of affordances, **Ecological Psychology, Volume 15** (2), pp. 181-195.

Clapham, David (2005), **The Meaning of Housing; A pathways approach**, The Policy Press, Bristol.

Clark, W.A.V., and Dieleman, F.M. (1996), **Households and Housing. Choice and Outcomes in the Housing Market**, Centre for Urban Policy Research, New Brunswick.

Coolen, H., and Hoekstra, J. (2001), Values as determinants of preferences for housing attributes, **Journal of Housing and the Built Environment, Volume 16**, pp. 285-306.

Coolen, Henny (2006), The meaning of dwellings: An ecological perspective, **Housing, Theory and Society, Volume 23** (4), pp. 185-201.

Coolen, H., and Meesters, J. (2006), **Dwellers and Designers: similarities and differences in meanings**, conference paper presented at ENHR conference, Ljubljana, Slovenia, July 2-5.

Coolen, Henny (2008), **The meaning of dwelling features: Conceptual and methodological issues**, IOS Press, Amsterdam.

Cresswell, Tim (2004), **Place, a Short Introduction**, Blackwell Publishing, Oxford.

Dam, Frank Van, Heins, Saskia, and Elbersen, Berien S. (2002), Lay discourses of the rural and stated and revealed preferences for rural living. Some evidence of the existence of a rural idyll in the Netherlands, **Journal of Rural Studies, Volume 18**, pp. 461-476.

Diepen, A. Van, and Arnoldus, M. (2003), **De woonvraag in de vraaggestuurde markt, bouwstenen uit het woonmilieuanalyse en leefstijlenonderzoek**, DGW/NETHUR Partnership 23, Amsterdam.

Dorst, M. J. Van (2005), **Een duurzaam leefbare woonomgeving, fysieke voorwaarden voor privacyregulering**, Eburon, Delft.

Després, C. (1991a), **The Form, Experience and Meaning of Home in Shared Housing**, dissertation University of Wisconsin-Milwaukee, UMI, Ann Arbor.

Després, C. (1991b), The meaning of home: Literature review and directions for future research and theoretical development, **The Journal of Architectural and Planning Research, Volume 8** (2), pp. 96-115.

Easthope, Hazel (2004), A place called home, **Housing, Theory and Society, Volume 21** (3), pp. 128-138.

Engelsdorp Gastelaars, Rob, and Hamers, David (2006), **De nieuwe stad, stedelijke centra als brandpunten van interactie**, NAi Uitgevers, Rotterdam.

Feijten, Peteke, and Mulder, Clara H. (2005), Life-course Experience and Housing Quality, **Housing Studies, Volume 20** (4), pp. 571-587.

Feijten, Peteke, Hooimeijer, Pieter, and Mulder, Clara H. (2008), Residential experience and residential environment choice over the life-course, **Urban Studies, Volume 45**, pp. 141-162.

Field, Andy (2000), **Discovering Statistics using SPSS for Windows**, Sage Publications, London.

Gärling, T., and Friman, M. (2001), A psychological conceptualization of residential choice and satisfaction, in: Aragones, J., Francescato, G., and Gärling, T. (Eds.), **Residential Environments: Choice, Satisfaction and Behaviour**, Greenwood, Westport, CT.

Geer, J.P. Van de (1988), **Analyse van kategorische gegevens**, Van Loghum Slaterus, Deventer.

Gibler, Karen M., and Nelson, Susan L. (2003), Consumer behavior applications to real estate education, **Journal of Real Estate Practice and Education, Volume 6** (1), pp. 63-83.

Gibson, J.J. (1979), **The Ecological Approach to Visual Perception**, Houghton Mifflin, Boston.

Graaff, Laura De, and Karsten, Lia (2007), Woonmilieuvoorkeuren van de creative klasse, **Agora, Number 2**, pp. 41-44.

Gram-Hanssen, Kirsten, and Claus Bech-Danielsen (2004), House, home and identity from a consumption perspective, **Housing, Theory and Society, Volume 21** (1), pp. 17-26.

Grampp, C. (1990), Social meanings of residential gardens, in: Francis, M., and Hester, R.T. (eds.), **The Meaning of Gardens**, MIT Press, Cambridge, MA, pp. 178-184.

Gutman, J. (1982), A means-end chain model based on consumer categorization processes, **Journal of Marketing, Volume 46**, pp. 60-72.

Heft, Harry (2003), Affordances, dynamic experience, and the challenge of reification, **Ecological Psychology, Volume 15** (2), pp. 149-180.

Heft, Harry, and Kyttä, Marketta (2006), A psychologically meaningful description of environments requires a relational approach, **Housing, Theory and Society, Volume 23** (4), pp. 210-213.

Heins, Saskia (2002), **Rurale woonmilieus in stad en land, plattelandsbeelden, vraag en aanbod van rurale woonmilieus**, Eburon, Delft.

Hooimeijer, Pieter (2007), **Dynamiek in de derde leeftijd, de consequenties voor het woonbeleid**, Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (VROM), Den Haag.

Karsten, Lia, Reijndorp, Arnold, and Zwaard, Joke Van der (2006), **Smaak voor de stad; een onderzoek naar de stedelijke woonvoorkeur van gezinnen**, Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (VROM), Den Haag.

Karsten, Lia (2007), Housing as a way of life: Towards an understanding of middle-class families' preferences for an urban residential location, **Housing Studies, Volume 22** (1), pp. 83-98.

King, Peter (2008), **In Dwelling: Implacability, Exclusion and Acceptance**, Aldershot, Ashgate.

Klis, Marjolein Van der, and Mulder, Clara H. (2008), Beyond the trailing spouse: the commuter partnership as an alternative to family migration, **Journal of Housing and the Built Environment, Volume 23**, pp.1-19.

Latapy, Matthieu, Magnien, Clemence, and Vecchi, Nathalie Del (2008), Basic notions for the analysis of large two-mode networks, **Social Networks, Volume 30**, pp. 31-48.

Leeuwen, H. Van (1980), **Ecologie van het wonen**, Vuga, 's-Gravenhage.

Lindberg, E., Gärling, T., Montgomery, H., and Waara, R. (1987), People's evaluations of housing attributes: A study of underlying beliefs and values, **Scandinavian Housing and Planning Research, Volume 4**, pp. 81-103.

Lindberg, E., Hartig, E., Garvill, J., and Gärling, T. (1992), Residential-location preferences across the life span, **Journal of Environmental Psychology, Volume 12**, pp. 187-198.

Lupi, Tineke (2003), De mythe van de suburbane jeugd, **Rooilijn, Number 8**, pp. 403-408.

Mallet, Shelley (2004), Understanding home: a critical review of literature, **The Sociological Review, Volume 52**, pp. 62-89.

McDonogh, Gary W. (2006), Suburban place, mythic thinking, and the transformations of global cities, **Urban Anthropology, Volume 35** (4), pp. 471-501.

Meesters, Janine, and Hoekstra, Joris (2006), Zweeds wonen in Schiedam; een evaluatie van Sveaparken, **Tijdschrift voor de Volkshuisvesting, Volume 3**, pp. 26-29.

Metaal, Stefan (2005), Hoe burgerlijk is de buitenwijk?, **Rooilijn, Number 1**, pp. 5-11.

Metaal, Stefan, Huis, Iris Van, and Reijndorp, Arnold (2008), **Rust en onrust in Nieuwegein**, Mitros, Utrecht.

Montijn, Ileen (2002), **Naar buiten; het verlangen naar landelijkheid in de 19de en 20ste eeuw**, SUN, Amsterdam.

Moore, J. (2000), Placing home in context, **Journal of Environmental Psychology, Volume 20**, pp. 207-217.

Muhammad, Saim, Ottens, Henk F.L., Ettema, Dick, and Jong, Tom De (2007), Telecommuting and residential locational preferences: a case study of the Netherlands, **Journal of Housing and the Built Environment, Volume 22**, pp.339-358.

Mulder, C.H. (1993), **Migration Dynamics, a Life Course Approach**, dissertation University of Amsterdam, Amsterdam.

Naess, Petter (2006), Accessibility, activity participation and location of activities: Exploring the links between residential location and travel behaviour, **Urban Studies, Volume 43** (3), pp. 627-652.

Oliver, Paul (2003), **Dwellings, The Vernacular House World Wide**, Phaidon Press Limited, London.

Pennartz, P.J.J. (1981), **De kern van het wonen op het spoor**, Coutinho, Muiderberg.

Pieters, R., Baumgartner, H., and Allen, D. (1995), A means-end chain approach to consumer goal structures, **International Journal of Research in Marketing, Volume 12**, pp. 227-244.

Pinkster, Fenne, and Kempen, Ronald Van (2002), **Leefstijlen en woonmilieuvoorkeuren**, Bergdrukkerij, Amersfoort.

Rapoport, A. (1982), **The Meaning of the Built Environment**, Sage, Beverley Hills.

Rapoport, A. (1990), Systems of activities and systems of settings, in: Kent, S. (ed.), **Domestic Architecture and the Use of Space**, Cambridge University Press, Cambridge, pp. 9-20.

Rapoport, A. (1995), A critical look at the concept 'Home', in: Benjamin, D.N.A., and Stea, D. (eds.), **The Home: Words, Interpretations, Meanings, and Environments**, Aldershot, Avebury, pp. 25-52.

Rapoport, A. (2001), Theory, culture and housing, **Housing, Theory and Society, Volume 17** (4), pp. 145-165.

Reijndorp, Arnold, Kompier, Vincent, Metaal, Stefan, Nio, Ivan, and Truijens, Birgitt (1998), **Buitenwijk**, NAi Uitgevers, Rotterdam.

Reijndorp, Arnold (2004), **Stadwijk, stedenbouw en dagelijks leven**, NAi Uitgevers, Rotterdam.

Reijndorp, Arnold, Mik, Edzard, Ghannouti, Mimoun, Esser, Bram, Werkman, E.A. (2005), **Stad in conflict**, Platform GRAS, Groningen.

Rekom, Johan Van, and Wieringa, Berend (2007), On the hierarchical nature of means-end relationships in laddering data, **Journal of Business Research, Volume 60**, pp. 401-410.

Reynolds, T. J., and Gutman, J. (1988), Laddering theory, method, analyses, and interpretation, **Journal of Advertising Research, Volume 28**, pp. 11-31.

Rossi, P.H. (1955), **Why Families Move, A Study in the Social Psychology of Urban Residential Mobility**, The Free Press, Glencoe.

Schwartz, S.H. (1992), Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries, in: Zanna, M.P. (ed.), **Advances in Experimental Social Psychology**, Volume 25, Academic Press, San Diego, pp. 1-65.

Schwartz, S.H. (1994), Are there universal aspects in the structure and contents of human values?, **Journal of Social Issues, Volume 50** (4), pp. 19-45.

Schwartz, S.H. (2006), Les valeurs de base de la personne: théorie, mesures et applications, **Revue Française de Sociologie, Volume 47** (4), pp. 929-968.

Truijens, Aleid (2006), De stilte is vreselijk, in: **Volkskrant magazine** 4.3.2006.

Wasserman, Stanley, and Faust, Katherine (1994), **Social Network Analysis, Methods and Applications**, Cambridge University Press, Cambridge.

Wijs-Mulkens, E. De (1999), **Wonen op stand; lifestyles en landschappen van de culturele en economische elite**, het Spinhuis, Amsterdam.

Appendix 1 Design and implementation of the questionnaire

Four theoretical assumptions are important in this research:

- Individuals pursue goals in their lives, and their actions are goal-oriented. Therefore their actions, ideas, and preferences are aimed at reaching these goals.
- Dwelling is a set of daily activities in the dwelling and in the residential environment.
- The specific meanings of dwelling are to be found in the relations between activities of people and features in the dwelling or in the residential environment.
- The context of dwelling is important to gain better understanding of how residents understand dwelling.
- Different types of residential environment might afford different meanings of dwelling.

This appendix makes these four assumptions operational and explains the research design and implementation of the questionnaire. The first section describes the sample. The second section explains the different parts of the questionnaire and how the theoretical assumptions are made operational. This is followed by a brief description of how the questionnaire was tested. This appendix concludes with a description of the implementation of the questionnaire.

A1.1 Sample taking

In February 2006, a nationwide telephone survey on the housing preferences of residents who are likely to move was carried out. The aim was to gain insight into the characteristics of the current and desired dwellings and residential environments of residents with an above-average income. About 2,000 respondents took part in this survey. Residents were selected from the SSP-lifestyle database 2005, in which it is possible to select residents on the basis of variables such as household income. The average gross household income in the Netherlands in 2005 was 29,000 euro per year, which amounts to 1,600 euro after taxes per month (NIBUD, 2005). This income threshold was used in order to select residents who have (some) choice on the housing market. The participant could be the owner, tenant, or his/her partner. The Housing Preference Survey (hereafter HPS) is based on two population samples. The first one was drawn from a database (SSP-lifestyle database 2005) containing Dutch households that had indicated an interest in participating in future surveys. From this database, residents were selected from four regions in the Netherlands (the north, east, south, and Randstad). Interviews were held within each of these regions, asking 250 respondents about their current and preferred housing situation. The reason to interview this sample was to deter-

mine how many Dutch families are willing to move. The second sample was drawn from the same database, but then selecting residents who had already indicated they were looking for a new house. Again residents from the four regions were selected. The reason to interview this second sample was to increase the number of respondents in the total sample who are looking for a new house. The questionnaire contains items on the demographic characteristics of the household, such as household composition, income, age, and level of education. It goes into depth on the current housing situation, asking for example, about the number of rooms, size of the living room, dwelling type, tenure, location, and neighbourhood. Then it asks whether the respondents are looking for a new house. Those who are willing to move are then asked many questions about the features of the desired dwelling and residential environment.

One of the assumptions in the theoretical framework is that information on the housing context is important to gain a better understanding of how residents perceive home life (Pennartz, 1981; Mulder, 1993). The housing context consists of attributes at the individual and household level, characteristics of the respondent's dwelling, and features of residential environment. While the HPS could provide this background data, a possible drawback of this dataset is that it only contains respondents with an above-average income. As a result, the sample is rather homogeneous. The survey on meaning of dwelling became a follow-up to the HPS. An extra question had been added to the HPS: "Are you interested in a follow-up study?" Of all respondents to the HPS, 96% said they were. We then made a selection of these respondents according to the type of residential environment, using the 'woonmilieu 13-indeling', which is a classification of residential environments used by the Dutch government, among others (Bertholet, 1992; Brouwer and Ruiterman, 1992). This classification distinguishes 13 different residential environments, varying from the city centre to suburban and rural residential areas. It is easy to apply, this classification, because it contains a distribution code at the zip code level. The aim was to interview 200 respondents in each type of residential environment – rural, suburban and city centre locations – adding up to 600 interviews. The HPS contains a sufficient number of respondents living in rural and suburban locations, but not enough in the city centre. Therefore, new addresses were bought from the same SSP-lifestyle database 2005, selected on the basis of income level and residential location. All selected households had an above-average income and were living in central city locations in the Netherlands. The size of the sample for the survey is 1495 respondents; 802 residents in city centre locations, 303 in suburban locations, and 390 in rural locations.

A1.2 Design of the questionnaire

The housing preference survey provides a basis for a description of the kind of dwellings and residential environments the respondents currently live in and the kind they desire to live in. As mentioned above, the HPS contains two populations. The respondents in the first population had answered the questions about their current and desired housing situation. Only those in the second population who were seriously looking for a new dwelling had answered all of the questions. All other respondents had been eliminated after the last question about search activities for a new dwelling. Thus, for our purposes, this means that complete data on the current and desired housing situation was available for only part of the sample compiled from HPS. Six months after the nationwide survey (the HPS), we started to administer our questionnaire on meaning of dwelling (September 2006).

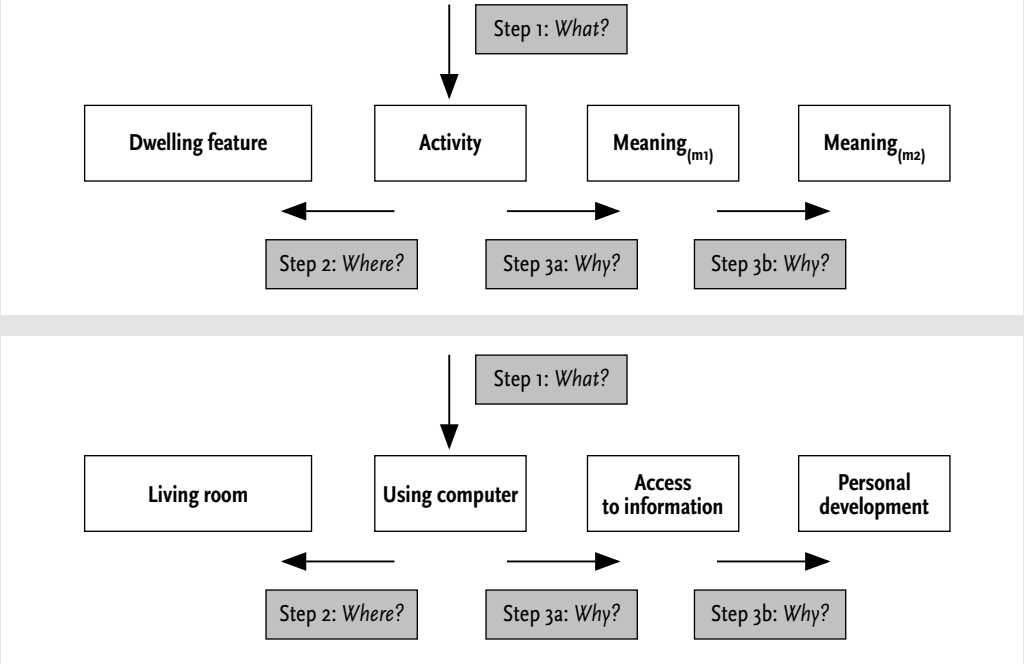
A1.2.1 Background variables

The questionnaire is constructed of sections devoted to eight different topics. The first section contains questions about socio demographic characteristics of respondents, for example household composition, age and level of education. The wording of all these questions is exactly the same as in the HPS. The interviewer asks the respondents who had already participated in the HPS to confirm that the data is still up to date and makes any necessary adjustments. All the other respondents have to answer the questions about household characteristics. The second section ascertains whether the residents are looking for a new dwelling. It contains questions about the current housing situation, for example about the size of the living room, number of rooms, architectural style, and dwelling type. Our questionnaire added two questions about the size of the current living room and the architecture of the dwelling. These points, which were not included in the HPS, relate to the topic raised in section seven of this questionnaire. The fourth section establishes the desired features of the dwelling and residential environment.

A1.2.2 Laddering

The fifth section is focused on the meaning that residents attach to activities they perform in the dwelling. These reflect the first two assumptions in the theoretical framework: 1) that action is goal oriented; and 2) that dwelling consists of a set of daily activities. The first step is to determine which activities respondents perform in and around their dwelling. They are asked to name some activities (four to eight) they perform in and around their dwelling that are important to them. The interviewer phrases this in an open-ended question and selects the corresponding closed response categories on

Figure A1.1 Meaning structure created with data from the questionnaire

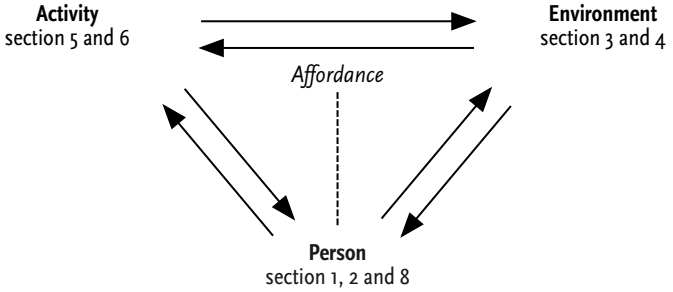


the computer screen, a procedure called field coding. The following categories are covered: cooking, eating, being together with the family, working at home, cleaning, playing with the children, hobby, being outside, relaxation, entertaining guests, being at the computer, personal care, sleeping, maintenance of the dwelling, gardening and 'other answers'. In the sixth section the respondents are asked about important activities in their residential environment. Again, the interviewer presents this as an open question and assigns the answer to one of the following categories: going out, recreation, going to a club, bringing children to school, going to work, going out for shopping, visiting friends, doing sports and 'other answers'.

The third main assumption in the theoretical framework is as follows: The specific meanings of dwelling are to be found in the relations between activities of people and features in the dwelling or in the residential environment. First, respondents are asked where they usually perform the activity. In this way, a housing attribute can be linked to an activity. The next step in the survey concerns the meanings respondents attach to the activities they mentioned. The laddering technique is used in this step (Reynolds and Gutman, 1988), and again field coding is applied. Based on previous research response categories have been defined (Boumeester *et al,* 2005; Coolen and Meesters, 2006). The respondent replies to an open question and the interviewer classifies the answer immediately. The laddering technique may be illustrated by the following exchange. A respondent mentions using the computer as an important activity, so the interviewer asks the respondent: "Why is it important for you to use the computer?" The respondent might answer: "Because

Figure A1.2 Conceptual framework and topics of the questionnaire

Section	Topic
1	Household composition
2	Willingness to move
3	Current housing situation
4	Preferred housing situation
5	Activities in and around the dwelling and their meanings
6	Activities in the residential environment and their meanings
7	Meaning of dwelling features
8	Income



I can look things up about news items or plan my holidays." The interviewer classifies this as access to information. The next question is: "Why is it important for you to look things up on the Internet?" The respondent could answer: "Because I can keep up on what is happening in the world around me." The interviewer classifies this answer as personal development. This sequence of two 'why' questions is repeated for all activities the respondent had mentioned. The result is a structured syntax of meaning whereby the activities in and around the dwelling and in the residential environment form the starting point, followed by dwelling features and the meaning people attach to that activity. Figure A1.1 illustrates a possible meaning structure.

The seventh section reverts to the housing preferences that the respondents had mentioned at the beginning of the questionnaire. The interviewer asks them to give the most important reason for their preferences with respect to several dwelling features, namely the number of rooms, size of the living room, tenure, dwelling type, architecture, garden, neighbourhood, and location. The selection of these features was made in light of previous research on the meaning of dwelling features (Boumeester *et al.*, 2005; Coolen *et al.*, 2002). The data from section five and six are central to this thesis, while the data from section seven are used for the companion study (Coolen, 2008).

The last section is about income. The wording of all these questions is exactly the same as in the HPS. Depending on the routing, it will take respondents at least 20 minutes and at most 40 to complete the questionnaire. The questionnaire was programmed in Blaise, a programme for CATI applications. Figure A1.2 gives an overview of the design of the questionnaire and places its various sections in the conceptual framework.

A1.3 Testing the questionnaire

In total, 20 respondents were selected from the HPS database. Respondents from population 1 and respondents who were willing to participate in the follow-up were selected for the pilot, because for these respondents all background information was available. Then a selection was made on the basis of region and type of residential environment.

A letter was sent to all 20 respondents, referring to the HPS and their possible interest in a follow-up survey. The letter did not mention that the survey at hand was actually a pilot (see Box A1 for the letter). In the course of three days, a total of ten respondents were interviewed. All remembered the letter and having taken part in the HPS, and all wanted to participate in the proposed survey. Various conclusions were drawn from this pilot. First, administering the 'short version' of the questionnaire lasted approximately 20 minutes. In light of its duration, it was decided not to add or delete any items from the questionnaire. Second, the respondents were quite comfortable with the laddering technique. They understood the 'why' questions and didn't need any explanation. Third, it proved necessary to adjust some response categories for both activities and meanings. Table A1.1 shows the list of all categories of activities and meanings that are used in the final version of the questionnaire. Fourth, many respondents found it difficult to come up with an answer to the third 'why' question; the answers they gave offered little new information, so it was decided to leave the third 'why' question out of the final version of the survey.

A1.3.1 Classifying the answers

As mentioned above, the response categories are based on previous research. Here, we briefly review the kinds of answers that fall under each category. The total number of categories may seem large. While some apply to only one or two activities, many can be used for numerous activities. Pleasure is an example of a category that pertains to many different activities. For instance, the question "Why is it important for you to be outside?" might evoke the response *Because I like to sit in the sun*. Or the answer to "Why is it important for you to visit friends?" might be that *It makes me feel good to see my friends on a regular basis*. Peace and quiet is another category that is often used. The response to "Why is it important for you to work at home?" could be *I can finally find the peace and quiet to get things done*. And the same category could apply to a different activity; when asked "Why is it important for you to watch television?" the respondent could say that *In the evening, after the work, is when I allow myself a moment's rest*. Table A1.2 provides a full overview of all categories and a typical answer for each one.

A1.4 Instructing the interviewers

Interviewers play an important role in this research, as they collect all the data. The following points sum up what was expected from them:

- Motivate respondents to take part in the survey. This is important because the survey is long; the maximum duration can be 40 minutes.
- Understand the goal and aim of the survey.
- Be able to answer the respondents' questions about the survey.
- Be able to use the laddering technique, including its particular application in this survey, and specifically be able to perform field coding.
- Be able to vary the 'why' questions to keep the respondent alert, to make the survey more pleasant for the respondents, and to motivate them to come up with new answers.

In total 15 interviewers joined in the project. All were obliged to attend a four-hour training session, in which we explained the aim of the research and how to work with Blaise. We practiced classifying the answers in response categories, using answers from earlier research. We also did an exercise on the laddering technique, where the interviewers played the role of interviewer as well as respondent, to familiarise them with the research topic and the laddering technique.

A1.5 Implementation of the questionnaire

All questionnaires were administered in the course of ten evenings. A researcher from the university always went along to supervise the interviewing process. Supervision mainly involved helping with the questions raised by the respondents, and sometimes helping with the classification in response categories. Not all respondents were able to come up with a new answer to the second 'why' question. In such cases, the interviewers had to fill in the code for 'don't know'. Each day the data was reviewed to check the answers and categorisations for obvious errors. No particular errors showed up regularly. The aim was to conduct at least 200 interviews in central city locations, 200 in suburban, and 200 in rural areas. A total of 235 interviews were actually held in city centre locations, 202 in suburban, and 222 in rural locations. Table A1.3 shows the response rates for this survey. One reason why the response was relatively high is that respond-

Table A1.3 Response rates

	Number	Percentage
Addresses in database	1495	100
Dial attempts	1110	74 (1110/1495)
Finished interviews	659	59 (659/1110)
Response city centre	235	47 (235/503)
Response suburban	202	77 (202/263)
Response rural	222	65 (222/344)
Response total	659	46 (659/1495)

ents living in a suburban or rural type of residential environment had already indicated their interest in taking part in a follow-up study on housing preferences. Another reason might be that especially people who are willing to move feel it is important for planners and developers to gain a better understanding their housing preferences.

Box A1 Letter to the respondents

Dear sir/ madam,

About half a year go you have participated in a survey about housing preferences of the Delft University of Technology . You indicated that you might be interested in follow-up research on the meaning of housing. The last research, the Housing Preference Survey, mapped your preferred dwelling and residential environment. The current research mainly looks at your motivations for your housing preferences. In one of the coming weeks one of our pollsters from Delft University of Technology will call you and asks whether you would like to participate in this follow-up research. This research uses the data from the Housing Preference Survey that is why it is important that our pollsters can talk to you again. The survey will take approximately 20 minutes.

You can be sure that Delft University of Technology will use the data completely anonymous. Only answers from groups of respondents will be presented; your personal data will never be traceable in the results. The data will be used for publications in professional and scientific journals on housing. In this way, you contribute to improve the insights about the motivations of housing preferences of residents and do planners and developers have a better understanding of where to build which kind of dwellings.

If you might have any question as a result of this letter, please feel free to contact us. You can ask your question to the pollster, but you can also contact Mrs. Janine Meesters, phone number 015-2786690 or j.meesters@tudelft.nl.

Thank you very much for your cooperation.

With kind regards,

Janine Meesters
OTB Research Institute for Housing, Urban and Mobility Studies
Delft University of Technology

Table A1.1 Response categories of activities and meanings

Activity	Response category
Cooking	Pleasure
	Convenience
	Entertaining guests
	Hospitality
	Hobby
	Being together with friends
	Comfort
	Eating together with others
	Space
	Saving time
	Other meaning*
	Refusal
	Don't know
Eating	Entertaining guests
	Being together with the nuclear family
	Being together with friends
	Pleasure
	Peace and quiet
	Time for one another
	Basic need
	Social contacts
	Sharing things together
	Hospitality
	Health
	Space
Being together with the nuclear family	Privacy
	Home life
	Sense of security
	Harmony
	Sharing things together
	Pleasure
	Peace and quiet
	Sense of safety
	Feeling at home
	Time for one another
	Social contacts
	Enjoyable
Working at home(1)	Peace and quiet
	Home life
	Personal development
	Doing what you want to do
	No traffic
	Work concentrated
	No interruption
	Space

>>>

Table A1.1 Response categories of activities and meanings (continuation)

Activity	Response category
Working at home(2)	Own company
	Necessity
	Combining children and work
Cleaning	Neat and tidy house
	Obvious
	Efficient
	Hygienic
	Safe
	Sense of tidiness
	Peace and quiet
	Relaxation
	Pleasure
Children playing	Place to retreat
	Hospitality
	Personal development child
	Peace and quiet
	Safe
	Free
	Pleasure
	Practical
	Invite other children over
	Privacy
Hobby & relaxing	Stimulating
	Freedom
	Time to yourself
	Personal development
	Peace and quiet
	Relaxation
	Break from work
	Creativity
	Keeping busy
	Pleasure
Being outside(1)	Social contacts
	Sense of space
	Freedom
	Privacy
	Relaxation
	Entertaining guests
	Eating/drinking outside
	Recreation
	Pleasure
	Hospitality
	Gardening
	Enjoyable
	Peace and quiet

>>>

Table A1.1 Response categories of activities and meanings (continuation)

Activity	Response category
Being outside(2)	Nature
Entertaining guests	Privacy
	Hospitality
	Sense of security
	Harmony
	Pleasure
	Peace and quiet
	Sense of safety
	Feeling at home
	Sharing things together
	Social contacts
	Enjoyable
Being at the computer	Access to information
	Social contacts
	Basic need
	Work at home
	Stimulating
	Hobby
	Creativity
	Personal development
	Relaxation
Personal care	Hygiene
	Peace and quiet
	Space
	Relaxation
	Time to yourself
	Privacy
Maintenance of the dwelling	Adapt the dwelling according to one's own needs
	Increase residential satisfaction
	Keeping busy
	Freedom
	Pleasure
	Preservation of the dwelling
	Saving money
	Value of the dwelling
Gardening	Pleasure
	Keeping busy
	Being out of doors
	Nature
	Freedom
	Relaxation
	Peace and quiet
	Break from work
	Necessity
	Garden looks beautiful

>>>

Table A1.1 Response categories of activities and meanings (continuation)

Activity	Response category
Going out	Social contacts
	Relaxation
	Get away from things
	Peace and quiet
	Pleasure
	Enjoyable
	Variety
	Freedom
	Convenience
	Personal development
	Break from work
Recreation	Relaxation
	Nature
	Peace and quiet
	Sense of space
	Living close to green space
	Freedom
	Break from work
	Pleasure
	Health
	Social contacts
	Being out of doors
	Exercise
	Walk the dog
Going to a club	Social contacts
	Community spirit
	Relaxation
	Personal development
	Enjoyable
	Creativity
	Get away from things
	Break from work
Bringing children to school	Saving time
	Convenience
	Children independent sooner
	Sense of responsibility
	Meeting other children
	Mutual support
	Children feel at home
	Efficient
	Safe
	School and dwelling are one
Commuting(1)	Saving time
	Convenience
	Efficient

>>>

Table A1.1 Response categories of activities and meanings (continuation)

Activity	Response category
Commuting(2)	Safe
	Get to work early
	Peace and quiet
Daily errands	Close by
	Convenience
	Save time
	Freedom of choice
	Good quality products
	Social contacts
	Price
	Price quality ratio
	Health
	Environment
	Parking
Visiting friends	Privacy
	Social contacts
	Sense of security
	Harmony
	Relaxation
	Pleasure
	Peace and quiet
	Sense of safety
	Feeling at home
	Sharing things together
	Enjoyable
Doing sports	Break from work
	Health
	Relaxation
	Social contacts
	Get away from things
	Pleasure
Fun shopping	Social contacts
	Relaxation
	Get away from things
	Peace and quiet
	Pleasure
	Enjoyable
	Variety
	Freedom
	Convenience
	Personal development
	Break from work
	Necessity

*) The categories other meaning, refuse and don't know are present for all activities. Only the activity specific categories are mentioned in this list.

Table A1.2 Classification of answers to laddering questions

Response category	Question	Example answer
Pleasure	Why is it important for you to be outside?	Because I like to sit in the sun.
Convenience	Why is it important for the school to be close by?	Simply because it is convenient.
Entertaining guests	Why is it important to have a spacious kitchen?	So I can have friends over to dinner.
Hospitality	Why is it important to have friends over for dinner?	I want my friends to feel welcome in my home.
Hobby	Why is cooking important to you?	It's a hobby.
Be together with friends	Why is it important to have friends over for dinner?	It's important for me to get together with my friends.
Be together with the nuclear family	What is important to you about dining?	Dinner is one of those rare occasions when the whole family is together.
Comfort	What is important to you about having a spacious kitchen?	Cooking is a real hobby for me. So it's important for me to have a comfortable space to cook.
Space	What matters to you when you are cooking?	I need space for all my kitchen utensils.
Peace and quiet	Why is it important for you to watch television?	In the evening, after work, that is when I allow myself this moment's rest.
Time for one another	Why is it important to be together with your friends?	So you can spend time together and find out how someone is doing.
Basic need	Why is it important for you to sit in the sun?	You can't do without sunshine.
Social contacts	Why is it important for you to go to a tennis club?	It's not the sport but the occasional chat with other tennis players.
Sharing things together	Why is it important for you to spend time with your family?	You want to be there for your children, discussing their problems and experiences.
Privacy	Why is it important for children to have their own place to retreat?	Children need some privacy too, a place of their own.
Home life	Why is it important for you to eat together with your family?	Mealtime makes me realize the importance of a good family life.
Sense of safety	Why is it important for you to have a garden?	It's a safe feeling: I know my children won't get hurt when they play in the garden.
Sense of security	Why is it important for you to spend time with your immediate family?	I want to create a safe haven for my children.
Feeling at home	Why is it important for you to spend time together with friends and to know how they are doing?	Having friends over and spending time together makes me feel at home.
Harmony	Why is it important for you to spend time with your family?	You all live together, so you want to get along with them without any friction.
Enjoyable	Why is it important to get together with your friends?	They're just good company.
Personal development	Why is it important to have access to the Internet?	You can learn so many new things; it opens up your world.
Doing what you want	Why is it important to work at home and not be disturbed?	It allows me to do my own things, at my own pace.

>>>

Table A1.2 Classification of answers to laddering questions (continuation)

Response category	Question	Example answer
No traffic	Why is it important for you to work at home?	That means that I can avoid the traffic jams in the morning.
Work concentrated	Why is it important for you to work at home?	Because I can focus on my work.
No interruption	Why is it important for you to work at home?	No one can disturb me; I'm all by myself.
Neat and tidy house	Why is it important for you to clean the house?	Your house needs to be tidy.
Obvious	Why is it important for you to have a tidy house?	Well, that's obvious; you can't live in a dirty house.
Efficient	Why is it important for you to clean the house?	Since I don't like cleaning, we have an interior that is easy to keep clean.
Hygienic	Why is it important for you to clean?	It's for hygienic reasons.
Safe	Why is it important for you to bring you children to school?	We need to cross a busy street. I want them to arrive at school safely.
Sense of tidiness	Why is it important for you to have a tidy house?	A neat and clean house gives you a sense of order.
Relaxation	Why is it important for you to read in the evening hours?	I find it very relaxing.
Place to retreat	Why is it important that your children can play in the house?	They need their own space to play.
Personal development child	Why is it important for the children to have their own space to play?	Children learn by playing, so they can fully develop.
Free	Why is it important that your children can play in the house?	They can play without any limitations.
Practical	Why is it important that your children can play in the house?	It's practical; I know they are safe, so I don't need to watch them all the time.
Invite other children over	Why is it important for the children to have their own space to play?	It makes it easier to invite other children over to play.
Stimulating	Why is it important for you to learn new things and expand your horizons?	When you get old and stay home a lot, it is really stimulating to learn new things.
Freedom	Why is it important for you to go out and walk the dog?	It gives me a sense of freedom, being outside and all.
Time to yourself	Why is it important for you to read a book in the evening?	When the work is done, you finally have some time to yourself.
A break from work	Why is it important for you to play the piano?	It makes me forget about my work.
Creativity	Why is it important for you to arrange flowers?	It's such a nice creative activity.
Sense of space	Why is it important for you to be outside in your garden?	Having such a nice area outside gives me a sense of space.
Eating/drinking outside	Why is it important for you to be outside on your balcony?	If the weather is good, I always sit outside and eat breakfast in the sunshine.
Gardening	Why is it important for you to be outside in your garden?	I just love to work in the garden, tending the flowerbeds and all.
Nature	Why is gardening important to you?	It brings a little bit of nature close to home.
Access to information	Why is it important to be on the computer?	You can find information about anything on the Internet.

>>>

Table A1.2 Classification of answers to laddering questions (continuation)

Response category	Question	Example answer
Working at home	Why is it important to be on the computer?	It allows me to work at home.
Adapt the dwelling to own needs	Why is it important for you to do odd jobs around the house?	You can make your house the way you like it.
Increase residential satisfaction	Why is it important for you to make the house the way you like it?	It increases my residential satisfaction.
Keeping busy	Why is gardening important to you?	It keeps me busy.
Being out of doors	Why is gardening important to you?	When you're at the office all day, it's great to do some outdoor work as well.
Get away from things	Why is it important for you to go to the cinema?	It is a nice distraction from my daily duties.
Variety	Why is it important for you to go to the theatre?	Sometimes you just need to try new things; variety is the spice of life.
Living close to green space	Why is it important for you to take a walk?	We moved here because of all the green space in the neighbourhood. Now I go walking every evening.
Community spirit	Why is it important to go to the community centre?	At the centre, I talk to people and discuss what is going on locally. I really feel part of the community.
Saving time	Why is it important for the school to be close by?	You need to bring the children there everyday; it just saves time.
Children independent sooner	Why is it important for the school to be close by?	Then the children can go to school on their own sooner.
Sense of responsibility	Why is it important for your children to go to school independently?	It's just one street away, but going to school without us gives them a sense of responsibility.
Meeting other children	Why is it important for the children go to school?	They meet other children to play with.
Mutual support	Why is it important for the children to go to a school close by?	This way you have contact with other parents. So in case of an emergency you can count on some help from them.
Children feel at home	Why is it important for the children to meet playmates at school?	This way they feel at home in the neighbourhood.
Get to work early	What is important about the journey to work?	That it is short, so I can be at the office early.
Close by	What is important about doing daily errands?	That the shops are near my house.
Freedom of choice	What is important about doing daily errands?	That I have a good selection among different products.
Good quality products	What is important about doing daily errands?	I want to be able to buy high-quality items.
Health	Why is it important for you to participate in sports?	I want to stay healthy.
Necessity	Why is fun-shopping important to you?	It's not, shopping is just necessary every now and then.
Own company	Why is it important to work at home?	I have my own company and I always work from home.
Eating together with others	What is important for you when you cook?	To make a nice meal for my family.

>>>

Table A1.2 Classification of answers to laddering questions (continuation)

Response category	Question	Example answer
Combining children and work	Why is it important to work at home?	In this way I can combine looking after my children with getting some work done.
Recreation	Why is it important for you to be outside?	For your work you're indoors all day, so in my free time I like to go out for a walk.
Preservation of the dwelling	Why is it important to do the maintenance of your dwelling?	In this way I keep my dwelling in a good condition.
Saving money	Why is it important to do the maintenance of your dwelling?	You save a lot of money painting the window frames yourself.
Value of the dwelling	Why is it important to keep your dwelling in a good condition?	To preserve the value of my dwelling.
Exercise	Why is it important for you to walk the dog?	It is my daily exercise.
Low price	What is important in doing your daily errands?	That I can find products at a low price.
Environment	What is important in doing your daily errands?	I want to buy biological products to stimulate environmentally friendly farming.
Parking	What is important in doing your daily errands?	To have sufficient parking space close to the shops.
Garden looks beautiful	Why is gardening important for you?	I want my garden to look beautiful; it's the first thing visitors see.

Appendix 2 Key features of respondents

Table A2.1 Comparison of current household features and dwelling situation of respondents willing to move and respondents not willing to move, subdivided by type of residential environment

Context variable		City centre Willing to move (N=93)	City centre Not willing to move (N=141)	Suburban Willing to move (N=111)
Sex	Man	49 (52.7%)	77 (54.6%)	63 (56.8%)
	Woman	44 (47.3%)	64 (45.4%)	48 (43.2%)
Age	18-29 years	4 (4.3%)	3 (2.1%)	5 (4.5%)
	30-39 years	14 (15.1%)	12 (8.5%)	20 (18.0%)
	40-54 years	39 (41.9%)	40 (28.4%)	51 (45.9%)
	55+ years	36 (38.7%)	86 (61.0%)	35 (31.5%)
Household composition	One person	14 (15.1%)	21 (14.9%)	14 (12.6%)
	Two persons	47 (50.5%)	91 (64.5%)	35 (31.5%)
	Three and more persons	32 (34.4%)	29 (20.6%)	62 (55.9%)
Income	Low (1-1.5 times average)	10 (10.8%)	18 (12.8%)	37 (33.3%)
	Middle (1.5-2 times average)	26 (27.9%)	28 (19.9%)	46 (41.4%)
	High (>2 times average)	48 (51.6%)	74 (52.5%)	19 (17.1%)
	Unknown	9 (9.7%)	21 (14.9%)	9 (8.1%)
Level of education	Low	9 (9.7%)	14 (9.9%)	14 (12.6%)
	Intermediate	17 (18.3%)	28 (19.9%)	39 (35.1%)
	High	40 (43.0%)	53 (37.6%)	43 (38.7%)
	University	26 (27.9%)	44 (31.2%)	11 (9.9%)
	Unknown	1 (1.1%)	2 (1.4%)	4 (3.6%)
Dwelling type	Single family dwelling	37 (39.8%)	68 (48.2%)	91 (81.9%)
	Multi family dwelling	56 (60.2%)	73 (51.8%)	20 (18.1%)
Garden	Yes	36 (38.7%)	54 (38.3%)	93 (83.8%)
	No	57 (61.3%)	87 (61.7%)	18 (16.2%)
Number of rooms	1-3 rooms	35 (37.6%)	46 (32.6%)	9 (8.1%)
	4-5 rooms	44 (47.3%)	67 (47.5%)	63 (56.8%)
	6 and more rooms	14 (15.1%)	28 (19.9%)	29 (26.1%)
Size of living room	Less than 30 m²	27 (29.0%)	21 (14.9%)	23 (20.7%)
	30-45 m²	38 (40.9%)	64 (45.4%)	64 (57.7%)
	46 m² and more	28 (30.1%)	56 (39.8%)	24 (21.6%)
Tenure	Buying	61 (65.6%)	119 (84.4%)	81 (73.0%)
	Renting	32 (34.4%)	22 (15.6%)	30 (27.0%)
Neighbourhood	Silent	6 (6.5%)	11 (7.8%)	20 (18.0%)
	Quiet	31 (33.3%)	40 (28.4%)	62 (55.9%)
	Lively	35 (37.6%)	64 (45.4%)	20 (18.0%)
	Busy	20 (21.5%)	26 (18.4%)	7 (6.3%)
	Unknown	1 (1.1%)	0	2 (1.8%)
Architecture	Traditional	43 (46.2%)	68 (48.2%)	82 (73.9%)
	Modern	37 (39.8%)	65 (46.1%)	27 (24.3%)
	Experimental	6 (6.5%)	4 (2.8%)	0
	Unknown	7 (7.5%)	4 (2.8%)	2 (1.8%)

Suburban Not willing to move (N=91)	Rural Willing to move (N=113)	Rural Not willing to move (N=109)	Total Willing to move (N=317)	Total Not willing to move (N=341)
45 (49.5%)	57 (50.4%)	54 (49.5%)	169 (53.3%)	176 (51.6%)
46 (50.5%)	56 (49.6%)	55 (50.5%)	148 (46.7%)	165 (48.4%)
6 (6.6%)	3 (2.7%)	3 (2.8%)	12 (3.8%)	12 (3.5%)
20 (22.0%)	27 (23.9%)	26 (23.9%)	61 (19.2%)	58 (17.0%)
30 (33.0%)	47 (41.6%)	41 (37.6%)	137 (43.2%)	111 (32.6%)
35 (38.5%)	36 (31.8%)	39 (35.8%)	107 (33.8%)	160 (46.9%)
8 (8.8%)	7 (6.2%)	6 (5.5%)	35 (11.0%)	35 (10.3%)
36 (39.6%)	42 (37.2%)	41 (37.6%)	124 (39.1%)	168 (49.3%)
47 (51.6%)	64 (56.6%)	62 (56.9%)	158 (49.8%)	138 (40.5%)
32 (35.2%)	44 (38.9%)	39 (35.8%)	91 (28.7%)	89 (26.1%)
27 (29.7%)	39 (34.5%)	33 (30.3%)	111 (35.0%)	88 (25.8%)
21 (23.1%)	26 (23.0%)	30 (27.5%)	93 (29.3%)	125 (36.7%)
11 (12.1%)	4 (3.5%)	7 (6.4%)	22 (6.9%)	39 (11.4%)
16 (17.6%)	21 (18.6%)	26 (23.9%)	44 (13.9%)	56 (16.4%)
30 (33.0%)	44 (38.9%)	43 (39.4%)	100 (31.5%)	101 (29.6%)
31 (34.1%)	36 (31.9%)	28 (25.7%)	119 (37.5%)	112 (32.8%)
10 (11.0%)	9 (7.9%)	8 (7.3%)	46 (14.5%)	62 (18.2%)
4 (4.4%)	3 (2.7%)	4 (3.7%)	8 (2.5%)	10 (2.9%)
82 (90.1%)	103 (91.2%)	104 (95.4%)	231 (72.9%)	254 (74.5%)
9 (9.9%)	10 (8.8%)	5 (4.6%)	86 (27.1%)	87 (25.5%)
83 (91.2%)	106 (93.8%)	105 (96.3%)	235 (74.1%)	242 (71.0%)
8 (8.8%)	7 (6.2%)	4 (3.7%)	82 (25.9%)	99 (29.0%)
5 (5.5%)	9 (8.0%)	8 (7.3%)	53 (16.7%)	53 (17.3%)
63 (69.2%)	71 (62.9%)	61 (56.0%)	178 (56.2%)	191 (56.0%)
23 (25.3%)	43 (38.1%)	40 (36.7%)	86 (27.1%)	91 (26.7%)
12 (13.2%)	31 (27.5%)	16 (14.8%)	81 (25.6%)	49 (14.4%)
54 (59.3%)	64 (56.6%)	62 (56.9%)	166 (52.4%)	180 (52.8%)
25 (27.5%)	18 (15.9%)	31 (28.4%)	70 (22.0%)	112 (32.8%)
80 (87.9%)	87 (77.0%)	97 (89.0%)	229 (72.2%)	296 (86.8%)
11 (12.1%)	26 (23.0%)	12 (11.0%)	88 (27.8%)	45 (13.2%)
14 (15.4%)	21 (18.6%)	20 (18.3%)	47 (14.8%)	45 (13.2%)
48 (52.7%)	56 (49.6%)	73 (67.0%)	149 (47.0%)	161 (47.2%)
27 (29.7%)	27 (23.9%)	13 (11.9%)	82 (25.9%)	104 (30.5%)
1 (1.1%)	7 (6.2%)	3 (2.8%)	34 (10.7%)	30 (8.8%)
1 (1.1%)	2 (1.7%)	0	5 (1.6%)	1 (0.3%)
70 (76.9%)	104 (92.0%)	101 (92.7%)	229 (72.2%)	239 (70.1%)
17 (18.7%)	6 (5.3%)	5 (4.6%)	70 (22.1%)	87 (25.5%)
4 (4.4%)	2 (1.8%)	1 (0.9%)	8 (2.5%)	9 (2.6%)
0	1 (0.9%)	2 (1.8%)	10 (3.2%)	6 (1.8%)

Appendix 3 Log linear analysis

Table A3.1 Log linear analysis for type of residential environment, willingness to move, and household and dwelling features

Log linear analysis	Effect	Pearson chi-square
Type of residential environment x willingness to move x sex	Type of residential environment x willingness to move (p=0.003)	p=0.003
Type of residential environment x willingness to move x age	Type of residential environment x willingness to move (p=0.014)	p=0.003
	Type of residential environment x age (p=0.001)	p=0.000
	Willingness to move x age (p=0.024)	p=0.007
Type of residential environment x willingness to move x household composition	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Type of residential environment x household composition (p=0.000)	p=0.000
Type of residential environment x willingness to move x income	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Type of residential environment x income (p=0.000)	p=0.000
Type of residential environment x willingness to move x level of education	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Type of residential environment x level of education (p=0.000)	p=0.000
Type of residential environment x willingness to move x dwelling type	Type of residential environment x willingness to move (p=0.000)	p=0.003
	Type of residential environment x dwelling type (p=0.000)	p=0.000
	Willingness to move x dwelling type (p=0.018)	p=0.626
Type of residential environment x willingness to move x garden	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Type of residential environment x garden (p=0.000)	p=0.000
Type of residential environment x willingness to move x number of rooms	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Type of residential environment x number of rooms (p=0.000)	p=0.000
Type of residential environment x willingness to move x size of the living room	Type of residential environment x willingness to move (p=0.008)	p=0.003
	Type of residential environment x size of living room (p=0.009)	p=0.004
	Willingness to move x size of living room (p=0.003)	p=0.002
Type of residential environment x willingness to move x tenure	Type of residential environment x willingness to move (p=0.003)	p=0.003
	Willingness to move x tenure (p=0.000	p=0.000

Appendix 4 Preferred amenities

Table A4.1 Preferred amenities close to the dwelling, specified per type of residential environment

Amenities		City centre (N=93)	Suburban (N=111)	Rural (N=113)	Total (N=317)
Daily errands	Yes	73 (78.5%)	85 (76.6%)	79 (69.9%)	237 (74.8%)
	No	15 (16.1%)	26 (23.4%)	34 (30.1%)	75 (23.6%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Park	Yes	54 (58.1%)	65 (58.6%)	53 (46.9%)	172 (54.2%)
	No	34 (36.5%)	46 (41.4%)	60 (53.1%)	140 (44.2%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Post agency	Yes	43 (46.2%)	56 (50.5%)	59 (52.2%)	158 (49.8%)
	No	45 (48.4%)	55 (49.5%)	54 (47.8%)	154 (48.6%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Bus stop	Yes	40 (43.0%)	60 (54.5%)	48 (42.5%)	148 (46.7%)
	No	48 (51.6%)	51 (45.5%)	65 (57.5%)	164 (51.7%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
School close by*	Yes	12 (12.9%)	51 (45.5%)	52 (46.0%)	115 (36.3%)
	No	76 (81.7%)	60 (54.5%)	61 (54.0%)	197 (62.1%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Restaurant*	Yes	57 (61.3%)	20 (18.0%)	29 (25.7%)	106 (33.4%)
	No	31 (33.3%)	91 (82.0%)	84 (74.3%)	206 (65.0%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Café*	Yes	52 (55.9%)	16 (14.4%)	37 (32.7%)	105 (33.1%)
	No	36 (38.7%)	95 (85.6%)	76 (67.3%)	207 (65.3%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Train station*	Yes	40 (43.0%)	42 (37.8%)	20 (17.7%)	102 (32.2%)
	No	48 (51.6%)	69 (62.2%)	93 (82.3%)	210 (66.2%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Theater*	Yes	37 (39.8%)	22 (19.8%)	12 (10.6%)	71 (22.4%)
	No	51 (54.8%)	89 (80.2%)	101 (89.4%)	241 (76.0%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Sport facilities	Yes	12 (12.9%)	22 (19.8%)	34 (30.1%)	68 (21.4%)
	No	76 (81.7%)	89 (80.2%)	79 (69.9%)	244 (77.0%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Cinema*	Yes	29 (31.2%)	8 (7.2%)	11 (9.7%)	48 (15.1%)
	No	59 (63.4%)	103 (92.8%)	102 (90.3%)	264 (83.3%)
	Missing	5 (5.4%)	0	0	5 (1.6%)
Fun shopping	Yes	19 (20.4%)	10 (9.0%)	11 (9.7%)	40 (12.6%)
	No	69 (74.2%)	101 (91.0%)	101 (89.4%)	271 (85.5%)
	Missing	5 (5.4%)	0	1 (0.9%)	6 (1.9%)

*) Chi-square test $p<0.001$

Appendix 5 Mentioned activities and the frequencies

Appendix 5.1 Overview of all mentioned activities and the frequencies

Activity	Frequency (N=659)	Percentage
Relaxing	422	64%
Watching TV	188	45%
Reading	177	40%
Doing nothing	25	6%
Other activities	20	5%
Listening to music	12	3%
Cooking	372	56%
Gardening	261	40%
Eating	260	39%
Being at the computer	236	36%
Cleaning	215	33%
Hobby	152	23%
Handicraft	62	40%
Other activities	36	24%
Playing music	24	16%
Doing odd jobs	11	7%
Car maintenance	8	5%
Photography	8	5%
Taking care of pets	3	2%
Being outside	146	22%
Sleeping	143	22%
Working at home	121	18%
Entertaining guests	115	17%
Maintenance of the dwelling	98	15%
Children playing	81	12%
Being together with the nuclear family	66	10%

Activity	Frequency (N=659)	Percentage
Personal care	37	Removed from all analyses because of low frequency
Daily errands	523	79%
Recreation	423	64%
Walking	183	43%
Biking	136	32%
Walk the dog	65	15%
Children play outside	16	4%
Other activities	23	5%
Sports	292	44%
Going out (more than one answer possible)	272	41%
Restaurant	147	
Café	130	
Theatre	85	
Cinema	83	
Concert	32	
Museum	31	
Festival	5	
Visiting friends	237	36%
Commuting	206	31%
(Fun) shopping	159	24%
Going to a club	114	17%
Bringing the children to school	101	15%

Appendix 6 CA of everyday activities

Table A6.1 Discrimination measures for everyday activities in the dwelling and residential environment

	Dimension			
	1	2	3	4
Cooking	,004	,018	,358	,036
Eating	,090	,164	,062	,002
Being together with the nuclear family	,007	,004	,021	,056
Working at home	,098	,025	,000	,168
Cleaning	,271	,008	,162	,000
Children playing	,072	,260	,026	,002
Hobby	,002	,134	,002	,078
Being outside	,002	,025	,125	,005
Relaxing	,170	,065	,000	,064
Entertaining guests	,057	,084	,020	,010
Being at the computer	,025	,012	,000	,155
Sleeping	,215	,107	,026	,038
Maintenance of the dwelling	,152	,056	,007	,122
Gardening	,345	,068	,002	,038
Going out	,238	,089	,030	,057
Recreation	,008	,014	,019	,138
Going to a club	,019	,115	,031	,103
Bringing children to school	,105	,292	,007	,008
Commuting	,004	,000	,107	,016
Daily errands	,000	,072	,245	,000
Visiting friends	,012	,006	,073	,085
Sports	,002	,004	,011	,082
Fun shopping	,032	,002	,114	,080
% of Variance	**8,395**	**7,065**	**6,306**	**5,837**

Figure A6.1 Category quantifications of all activities on the first and second dimension

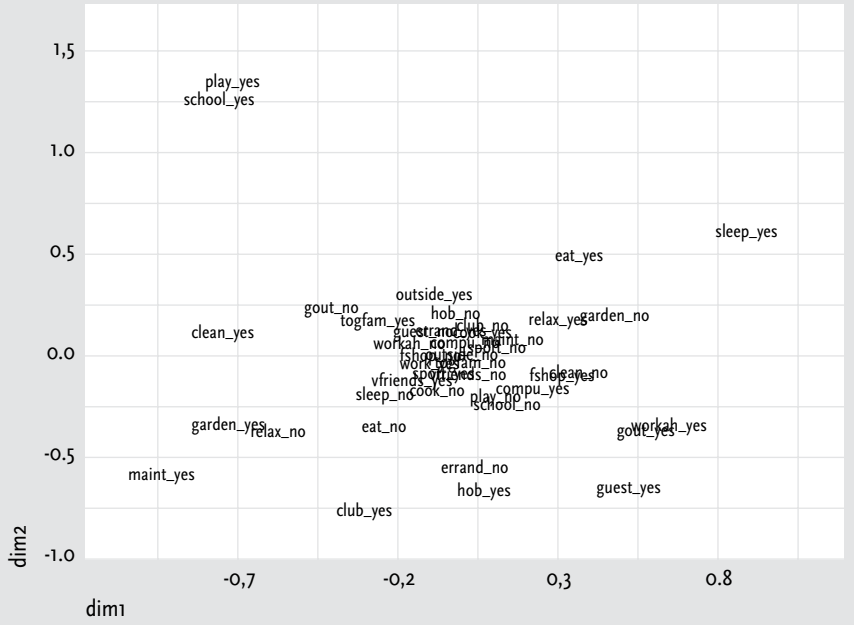


Figure A6.2 Category quantifications of all activities on the third and fourth dimension

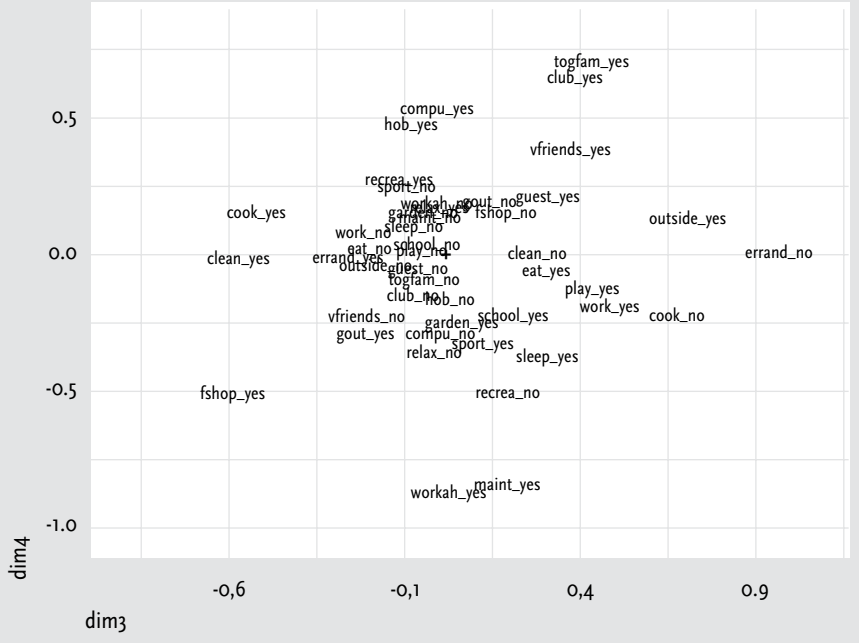


Table A6.2 Abbreviations of activities in the dwelling and in the residential environment in Figure A6.1 and A6.2

Activity	Abbreviation
Relaxing	Relax
Cooking	Cook
Gardening	Garden
Eating	Eat
Being at the computer	Compu
Cleaning	Clean
Hobby	Hob
Being outside	Outside
Sleeping	Sleep
Working at home	Workah
Entertaining guests	Guest
Maintenance of the dwelling	Maint
Children playing	Play
Being together with the nuclear family	Togfam
Daily errands	Errands
Recreation	Recrea
Sports	Sport
Going out	Gout
Visiting friends	Vfriends
Commuting	Work
(Fun) shopping	Fshop
Going to a club	Club
Bringing the children to school	School

Appendix 7

Results logistic regression models: activities

Table A7.1 Results logistic regression models activities in the dwelling

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activities	**Relaxing N=659**	**Cooking N=659**	**Gardening N=648**	**Eating N=659**
Type of residential environment (ref. city centre)	*p*=0.005	*p*=0.007	*p*=0.004	
Suburb		0.591 (0.402-0.868) *p*=0.007	2.016 (1.244-3.266) *p*=0.004	
Rural	0.525 (0.354-0.779) *p*=0.001	0.587 (0.403-0.854) *p*=0.005	2.184 (1.343-3.552) *p*=0.002	
Age (ref. 18-39)	*p*=0.024			
40-54				
55+	0.545 (0.349-0.852) *p*=0.008			
Household composition (ref. one and two persons)				
Three and more persons			0.554 (0.379-0.810) *p*=0.002	1.425 (1.041-1.952) *p*=0.027
Income (ref. low 1-1.5)				
Middle (1.5-2 times average)				
High (> 2 times average)				
Unknown				
Level of education (ref. low)				
Intermediate				
High				
University				
Dwelling type (ref. single family dwelling)				
Multi family dwelling			0.374 (0.213-0.656) *p*=0.001	

Being at the computer N=659	Cleaning N=635	Hobby N=641	Sleeping N=641
	p=0.008	*p*=0.000	*p*=0.001
	0.484 (0.304-0.768) *p*=0.002	2.091 (1.123-3.892) *p*=0.020	
		3.749 (2.017-6.963) *p*=0.000	0.391 (0.233-0.654) *p*=0.000
		0.585 (0.371-0.923) *p*=0.021	
p=0.033			
0.420 (0.212-0.834) *p*=0.013			
	p=0.014	*p*=0.026	*p*=0.000
		2.016 (1.100-3.696) *p*=0.023	
	0.516 (0.310-0.857) *p*=0.011		
	0.439 (0.234-0.825) *p*=0.011		5.033 (2.385-10.622) *p*=0.000
1.569 (1.096-2.246) *p*=0.014	0.621 (0.405-0.951) *p*=0.028		

>>>

Table A7.1 Results logistic regression models activities in the dwelling (continuation)

Predictor[1)]/activities	**Relaxing N=659**	**Cooking N=659**	**Gardening N=648**	**Eating N=659**
Garden (ref. yes)			*p*=0.001	
No garden			0.337 (0.183-0.621) *p*=0.000	
Neutral				
Neighbourhood (reference silent)			*p*=0.047	
Quiet				
Lively			0.506 (0.292-0.878) *p*=0.015	
Busy				
Size of living rooms (ref. < 34 m²)				
35-44 m²				
Over 45 m²				
Tenure (ref. buying)				
Rental				
Neutral				
Nagelkerke R²	**0.033**	**0.021**	**0.226**	**0.010**

1) Number of rooms is no significant predictor in any of the above models.
Changing N is caused by missing values.

Being at the computer N=659	Cleaning N=635	Hobby N=641	Sleeping N=641
	p=0.033		
	0.552		
	(0.352-0.863)		
	p=0.009		
	p=0.044		
	1.682		
	(0.974-2.906)		
	p=0.062		
0.031	**0.093**	**0.101**	**0.085**

Table A7.2 Results logistic regression models activities in the dwelling

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activities	**Being outside N=655**	**Working at home N=641**	**Entertaining guests N=655**
Type of residential environment (ref. city centre)		*p*=0.001	*p*=0.010
Suburb		0.369 (0.213-0.639) *p*=0.000	
Rural		0.568 (0.343-0.939) *p*=0.028	0.427 (0.246-0.740) *p*=0.002
Age (ref. 18-39)			
40-54			
55+			
Household composition (ref. one and two persons)			
Three and more persons			0.454 (0.287-0.721) *p*=0.001
Level of education (ref. low)		*p*=0.003	
Intermediate			
High		2.320 (1.112-4.840) *p*=0.025	
University		3.181 (1.436-7.047) *p*=0.004	
Dwelling type (ref. single family dwelling)			
Multi family dwelling			
Garden (ref. yes)	*p*=0.017		
No garden	0.498 (0.300-0.827) *p*=0.007		
Neutral			

Maintenance of the dwelling N=655	Children playing N=659	Being together with the nuclear family N=659
	p=0.000	
	0.362 (0.208-0.630) *p*=0.000	
	0.216 (0.092-0.509) *p*=0.000	
	15.750 (6.494-38.198) *p*=0.000	2.495 (1.466-4.247) *p*=0.001
p=0.021		
0.393 (0.203-0.761) *p*=0.006		

>>>

Table A7.2 Results logistic regression models activities in the dwelling (continuation)

Predictor[1]/activities	**Being outside N=655**	**Working at home N=641**	**Entertaining guests N=655**
Tenure (ref. buying)			*p*=0.021
Rental			0.301 (0.126-0.720) *p*=0.007
Neutral			
Nagelkerke R^2	0.021	0.097	0.090

1) The variables neighbourhood, size of the living room, number of rooms, income are no significant predictors in any of the above models.

Maintenance of the dwelling N=655	Children playing N=659	Being together with the nuclear family N=659
0.025	0.301	0.038

Table A7.3 Results logistic regression models activities in the residential environment

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activities	**Daily errands N=628**	**Recreation N=659**	**Doing sports N=630**	**Going out N=659**
Type of residential environment (ref. city centre)				*p*=0.000
Suburb				0.309 (0.194-0.495) *p*=0.000
Rural				0.335 (0.209-0.537) *p*=0.000
Age (ref. 18-29)*				*p*=0.038
30-39*				0.233 (0.087-0.625) *p*=0.004
Reference 18-39		*p*=0.004	*p*=0.002	
40-54				0.320 (0.125-0.816) *p*=0.017
55+		1.847 (1.196-2.852) *p*=0.006	0.533 (0.343-0.827) *p*=0.005	0.315 (0.123-0.804) *p*=0.016
Household composition (ref. one and two persons)				
Three and more persons				
Income (ref. 1-1.5 times average)		*p*=0.016		*p*=0.001
Middle (1.5-2 times average)				2.062 (1.298-3.275) *p*=0.002
High (> 2 times average)		0.499 (0.325-0.765) *p*=0.001		2.410 (1.496-3.883) *p*=0.000
Unknown				
Level of education (ref. low)			*p*=0.009	
Intermediate				
High				
University				

Visit friends N=659	Commuting N=654	Shopping** N=655	Going to a club N=655	Bringing children to school N=659
p=0.000		*p*=0.000	*p*=0.001	
2.303 (1.535-3.454) *p*=0.000			1.950 (1.083-3.512) *p*=0.026	
2.034 (1.366-3.029) *p*=0.000		0.295 (0.178-0.487) *p*=0.000	3.001 (1.667-5.401) *p*=0.000	
	p=0.000	*p*=0.002	*p*=0.000	*p*=0.000
				0.510 (0.302-0.859) *p*=0.011
	0.457 (0.291-0.716) *p*=0.001	0.536 (0.315-0.913) *p*=0.022	2.419 (1.337-4.374) *p*=0.003	0.140 (0.055-0.357) *p*=0.000
		0.503 (0.318-0.796) *p*=0.003		22.449 (8.771-57.460) *p*=0.000

>>>

Table A7.3 Results logistic regression models activities in the residential environment (continuation)

Predictor[1]/activities	Daily errands N=628	Recreation N=659	Doing sports N=630	Going out N=659
Dwelling type (ref. single family dwelling)				
Multi family dwelling				1.548 (0.999-2.399) *p*=0.050
Garden (ref. yes)				
No garden				
Neutral				
Neighbourhood (ref. silent)			*p*=0.011	
Quiet				
Lively				
Busy				
Number of rooms (ref. 1-3)				
4-5 rooms				
Over 6 rooms				
Size of the living room (ref. <34 m²)				
35-44 m²				
Over 45 m²				
Nagelkerke R²	0.050	0.041	0.073	0.196

1) Tenure is no significant predictor in any of the above models.

*) Cell frequencies in age group 18-29 were only sufficient with activity going out; for all other activities age groups 18-29 and 30-39 were taken together.

**) Significant interaction effect of age and household composition:

Predictor	Fun shopping
Age x household composition (18-39 x 1-2 person household ref.)	*p*=0.000
40-54 x 3 and more person household	4.524 (1.607-12.738) *p*=0.004
55+ x 3 and more person household	5.034 (1.481-17.112) *p*=0.010

Visit friends N=659	Commuting N=654	Shopping** N=655	Going to a club N=655	Bringing children to school N=659
			p=0.002	
			2.621 (1.514-4.538) *p*=0.001	
		p=0.049		
		2.041 (1.141-3.651) *p*=0.016		
		2.113 (1.055-4.231) *p*=0.035		
	p=0.013			
	0.557 (0.369-0.840) *p*=0.005			
0.040	0.059	0.108	0.121	0.375

Appendix 8 General meanings

Table A8.1 General meanings for activities in the dwelling and residential environment

Meaning	Activities to which the meaning relates
Pleasure (n=361)	Cooking, eating, being together with the nuclear family, cleaning, children playing, being outside, relaxing, entertaining guests, maintenance of the dwelling, gardening Going out, recreation, visiting friends, doing sports, fun shopping
Space (n=111)	Cooking, eating, working at home
Peace and quiet (n=252)	Eating, being together with the nuclear family, cleaning, working at home, children playing, hobby, being outside, relaxing, entertaining guests, gardening Going out, recreation, commuting, visiting friends, fun shopping
Social contacts (n=358)	Eating, being together with the nuclear family, entertaining guests, being at the computer Going out, recreation, going to a club, daily errands, visiting friends, doing sports, fun shopping
Sharing things together (n=167)	Eating, being together with the nuclear family, entertaining guests Visiting friends
Enjoyable (n=234)	Being together with the nuclear family, being outside, entertaining guests Going out, going to a club, visiting friends, fun shopping
Personal development (n=122)	Working at home, hobby, being at the computer, relaxing Going out, going to a club, fun shopping
Relaxation (n=533)	Cleaning, hobby, being outside, relaxing, being at the computer, gardening Going out, recreation, going to a club, visiting friends, doing sports, fun shopping
Break from work (n=153)	Hobby, relaxing, gardening Going out, recreation, going to a club, doing sports, fun shopping
Keeping busy (n=92)	Hobby, relaxing, maintenance of the dwelling, gardening
Convenience (n=307)	Going out, commuting, daily errands, fun shopping Cooking
Saving time (n=184)	Bringing the children to school, commuting, daily errands Cooking
Health (n=286)	Recreation, daily errands, doing sports Eating
Get away from things (n=106)	Going out, going to a club, doing sports, fun shopping
Safety (n=107)	Cleaning, bringing children to school, commuting
Necessity (n=85)	Fun shopping, working at home, gardening
Nature (n=118)	Gardening, recreation, being outside

Appendix 9

Results logistic regression models: general meanings of activities

Table A9.1 Results logistic regression models general meanings of activities in the dwelling and residential environment

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activity	**Being outside**	**Being at the computer***
Age (ref. 18-39)		
40-54		
55+		
Household composition (ref. 1-2 persons)		
3 and more persons	1.989 (1.281-3.088) *p*=0.002	
Level of education (ref. low)		
Intermediate		
High		
University		
Dwelling type (ref. single family dwelling)		
Multi family dwelling	2.390 (1.361-4.197) *p*=0.002	1.525 (1.047-2.222) *p*=0.028
Garden (ref. yes)	*p*=0.027	
No garden	0.424 (0.225-0.800) *p*=0.008	
Neutral		
Pleasure	2.676 (1.761-4.068) *p*=0.000	
Peace and quiet		
Social contacts		2.192 (1.551-3.097) *p*=0.000
Sharing things together		
Enjoyable	1.512 (1.010-2.263) *p*=0.045	

Daily errands	Eating	Being together with the nuclear family	Hobby
			p=0.000
			2.091 (1.123-3.892) *p*=0.020
			3.748 (2.017-6.963) *p*=0.000
	1.386 (1.007-1.907) *p*=0.045	2.462 (1.438-4.215) *p*=0.001	0.585 (0.371-0.923) *p*=0.021
			p=0.026
			2.016 (1.100-3.696) *p*=0.023
	2.066 (1.495-2.855) *p*=0.000		
		2.737 (1.617-4.635) *p*=0.000	

>>>

Table A9.1 Results logistic regression models general meanings of activities in the dwelling and residential environment (continuation)

Predictor[1]/activity	Being outside	Being at the computer*
Personal development		3.817 (2.504-5.820) *p*=0.000
Relaxation		1.920 (1.213-3.041) *p*=0.005
Saving time		
Nature	3.259 (2.047-5.188) *p*=0.000	
Nagelkerke R^2	0.147	0.146

1) Location, neighbourhood and number of rooms, space, break from work, keeping busy, convenience, health, getting away from things, safety and necessity, have not been a significant predictor for the above activities.

*) Interaction effect being at the computer:

Predictor	Being at the computer
Dwelling type times personal development (Single family dwelling x not mentioned personal development ref.)	
Multi family dwelling x personal development	0.305 (0.127-0.736) *p*=0.008

Daily errands	Eating	Being together with the nuclear family	Hobby
1.732 (1.092-2.756) *p*=0.020			
0.014	0.049	0.079	0.101

Table A9.2 Results logistic regression models general meanings of activities in the dwelling and residential environment

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activity	**Cooking**	**Bringing children to school**
Location (reference city centre)	*p*=0.050	
Suburb	0.632 (0.413-0.968) *p*=0.035	
Rural	0.638 (0.420-0.967) *p*=0.034	
Age (ref. 18-39)		*p*=0.014
40-54		
55+		0.192 (0.059-0.622) *p*=0.006
Household composition (ref. 1-2 persons)		
3 and more persons		9.973 (3.361-29.586)† *p*=0.000
Income (ref. 1-1.5 average)		
1.5-2 times average		
>2 times average		
Unknown		
Level of education (ref. low)		
Intermediate		
High		
University		
Dwelling type (ref. single family dwelling)		
Multi family dwelling		
Garden (ref. yes)		
No garden		
Neutral		
Number of rooms (ref. 1-3 rooms)		*p*=0.031
4-5 rooms		
6 and more rooms		

Maintenance of the dwelling	Relaxing	Cleaning	Recreation
	p=0.047		
	0.602 (0.384-0.943) *p*=0.027		
		p=0.005	*p*=0.011
		0.469 (0.293-0.753) *p*=0.002	
			1.789 (1.145-2.794) *p*=0.011
		1.643 (1.089-2.477) *p*=0.018	
			p=0.015
			0.492 (0.318-0.761) *p*=0.001
		p=0.014	
		0.522 (0.312-0.873) *p*=0.013	
		0.437 (0.231-0.826) *p*=0.011	
p=0.040	*p*=0.034		
0.423 (0.217-0.826) *p*=0.012	1.769 (1.100-2.845) *p*=0.019		

>>>

Table A9.2 Results logistic regression models general meanings of activities in the dwelling and residential environment (continuation)

Predictor[1]/activity	Cooking	Bringing children to school
Size of the living room (ref. 10-34 m²)		
35-44 m²		
45+ m²		
Tenure (ref. buy)		
Rent		
Neutral		
Pleasure		
Space	35.548 (11.082-114.031) † *p*=0.000	
Peace and quiet		
Relaxation		
Break from work		
Keeping busy		
Convenience	2.817 (1.991-3.988) *p*=0.000	
Safety		33.026 (16.928-64.432) † *p*=0.000
Nature		
Nagelkerke R²	0,285	0.643

1) Neighbourhood, social contacts, sharing things together, enjoyable, personal development, saving time, health, getting away from things and necessity have not been a significant predictor for the above activities.

† The confidence interval is large due to low frequency in one of the cells.

Maintenance of the dwelling	Relaxing	Cleaning	Recreation
		p=0.039	
		0.555 (0.352-0.874) *p*=0.011	
		p=0.034	
		1.772 (1.020-3.076) *p*=0.042	
		2.046 (1.426-2.936) *p*=0.000	
	1.576 (1.103-2.250) *p*=0.012		
	2.485 (1.633-3.781) *p*=0.000		
	3.306 (2.071-5.280) *p*=0.000		
3.681 (2.216-6.113) *p*=0.000			
			4.696 (2.648-8.328) *p*=0.000
0.085	0.139	0.125	0.113

Table A9.3 Results logistic regression models general meanings of activities in the dwelling and residential environment

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activity	**Children playing**	**Doing sports***
Location (reference city centre)		
Suburb		
Rural		
Age (ref. 18-39)	*p*=0.000	*p*=0.001
40-54	0.362 (0.208-0.630) *p*=0.000	
55+	0.216 (0.092-0.509) *p*=0.000	0.357 (0.191-0.667) *p*=0.001
Household composition (ref. 1-2 persons)		
3 and more persons	15.750 (6.494-38.198) † *p*=0.000	0.575 (0.340-0.975) *p*=0.040
Income (ref. 1-1.5 average)		
1.5-2 times average		
>2 times average		
Unknown		
Level of education (ref. low)		*p*=0.006
Intermediate		0.388 (0.200-0.750) *p*=0.005
High		
University		
Dwelling type (ref. single family dwelling)		
Multi family dwelling		

Working at home	Gardening**	Going out	Visit friends***
p=0.001	*p*=0.011	*p*=0.000	*p*=0.000
0.369	1.971	0.224	2.892
(0.213-0.639)	(1.126-3.448)	(0.139-0.361)	(1.744-4.798)
p=0.000	*p*=0.017	*p*=0.000	*p*=0.000
0.568	2.365	0.242	3.401
(0.343-0.939)	(1.341-4.169)	(0.152-0.384)	(2.031-5.695)
p=0.028	*p*=0.003	*p*=0.000	*p*=0.000
	0.604		
	(0.393-0.927)		
	p=0.021		
		p=0.003	
		2.000	
		(1.196-3.342)	
		p=0.008	
		2.415	
		(1.441-4.047)	
		p=0.001	
p=0.003			
2.320			
(1.112-4.840)			
p=0.025			
3.181			
(1.436-7.047)			
p=0.004			
	0.380		
	(0.197-0.731)		
	p=0.004		

>>>

Table A9.3 Results logistic regression models general meanings of activities in the dwelling and residential environment (continuation)

Predictor[1]/activity	Children playing	Doing sports*
Garden (ref. yes)		*p*=0.009
No garden		0.404 (0.226-0.722) *p*=0.002
Neutral		
Neighbourhood (ref. silent)		
Quiet		
Lively		
Busy		
Pleasure		
Social contacts		1.561 (1.011-2.410) *p*=0.045
Sharing things together		
Enjoyable		
Personal development		
Keeping busy		
Health		28.495 (17.927-45.295) † *p*=0.000
Getting away from things		2.189 (1.226-3.909) *p*=0.008
Necessity		
Nagelkerke R^2	0.301	0.534

1) Number of rooms, tenure, size of the living room, space, peace and quiet, relaxation, break from work, convenience, saving time, safety and nature have not been a significant predictor for the above activities.

† The confidence interval is large due to low frequency in one of the cells.

Working at home	Gardening**	Going out	Visit friends***
	p=0.001		
	0.280 (0.133-0.588) *p*=0.001		
	p=0.046		
	0.429 (0.231-0.799) *p*=0.008		
		0.626 (0.430-0.913) *p*=0.015	
		2.237 (1.526-3.278) *p*=0.000	6.104 (3.907-9.537) *p*=0.000
			10.682 (6.635-17.197) *p*=0.000
		2.434 (1.650-3.591) *p*=0.000	4.235 (2.748-6.525) *p*=0.000
		1.919 (1.199-3.070) *p*=0.007	
	37.036 (15.541-88.262) † *p*=0.000		
		8.688 (5.011-15.065) *p*=0.000	
	4.392 (2.524-7.640) *p*=0.000		
0.097	0.449	0.369	0.472

>>>

Table A9.3 Results logistic regression models general meanings of activities in the dwelling and residential environment (continuation)

*) Interaction effect doing sports:

Predictor	Doing sports
Household composition times garden (1-2 person household x garden)	*p*=0.007
3 and more persons x no garden	0.170 (0.036-0.815) *p*=0.027
3 and more persons x neutral	0.148 (0.031-0.714) *p*=0.01

**) Interaction effect gardening:

Predictor	Gardening
Household composition times necessity (1-2 person household x not mentioned necessity ref.)	
3 and more person household x necessity	3.274 (1.226-8.743) *p*=0.018

***) Interaction effect visiting friends:

Predictor	Visiting friends
Type of residential environment times enjoyable (city centre x not mentioned enjoyable ref.)	*p*=0.050
Rural x enjoyable	2.948 (1.238-7.022) *p*=0.015
Social contact times enjoyable (not mentioned social contacts x not mentioned enjoyable ref.)	
Social contacts x enjoyable	0.073 (0.030-0.179) *p*=0.000

Table A9.4 Results logistic regression models general meanings of activities in the dwelling and residential environment

Note: The first value in each cell is the odds ratio, the second value is the (95% confidence interval) and the third variable is the p-value for significance *p*=<0.050

Predictor[1)]/activity	**Going to a club**	**Entertaining guests**
Location (reference city centre)	*p*=0.001	*p*=0.002
Suburb	1.974 (1.078-3.614) *p*=0.028	
Rural	3.170 (1.729-5.814) *p*=0.000	0.322 (0.173-0.601) *p*=0.000
Age (ref. 18-39)	*p*=0.000	
40-54		
55+	2.054 (1.115-3.784) *p*=0.021	
Household composition (ref. 1-2 persons)		
3 and more persons		0.499 (0.300-0.830) *p*=0.007
Garden (ref. yes)	*p*=0.001	
No garden	2.772 (1.567-4.904) *p*=0.000	
Neutral		
Size of the living room (ref. 10-34 m²)		
35-44 m²		
45+ m²		
Tenure (ref. buy)		*p*=0.029
Rent		0.331 (0.127-0.861) *p*=0.023
Neutral		
Peace and quiet		
Social contacts	3.089 (1.908-5.002) *p*=0.000	2.416 (1.437-4.062) *p*=0.001
Sharing things together		5.325 (3.258-8.706) *p*=0.000

Fun shopping	Commuting*
p=0.000	
0.610	
(0.381-0.977)	
p=0.040	
0.268	
(0.157-0.458)	
p=0.000	
p=0.000	
0.458	
(0.264-0.796)	
p=0.006	
0.488	
(0.307-0.776)	
p=0.002	
	p=0.003
	0.484
	(0.307-0.761)
	p=0.002
	1.766
	(1.211-2.574)
	p=0.003

>>>

Table A9.4 Results logistic regression models general meanings of activities in the dwelling and residential environment (continuation)

Predictor[1]/activity	Going to a club	Entertaining guests
Enjoyable		4.032 (2.486-6.540) *p*=0.000
Personal development	2.262 (1.372-3.729) *p*=0.001	
Saving time		
Safety		
Necessity		
Nagelkerke R^2	0.195	0.311

1) Income, level of education, number of rooms, dwelling type, neighbourhood, pleasure, space, relaxation, break from work, keeping busy, convenience, health, getting away from things and nature have not been significant predictors in any of the above activities.
*) Interaction effect commuting:

Predictor	Commuting
Saving time x safe (not mentioned saving time x not mentioned safe ref.)	
Saving time x safe	0.353 (0.135-0.926) *p*=0.034

Fun shopping	Commuting*
	6.920 (4.675-10.242) *p*=0.000
	2.423 (1.513-3.880) *p*=0.000
7.537 (4.485-12.667) *p*=0.000	
0.218	0.261

Appendix 10 Universal value types

Self-direction (SD): Need to be independent in thought and action (e.g. creativity, freedom, choosing your own goals, curious, independent)

Stimulation (ST): Need for variety and stimulation (e.g. variety, enterprising, excitement, novelty, challenge)

Hedonism (HE): Need to experience pleasure (e.g. pleasure, enjoying life, happiness)

Achievement (AC): Need to experience personal success through demonstrating competence according to social standards (e.g. ambition, intelligence, obtain social approval)

Security (SE): Need for safety, harmony and stability of society, relationships and the self (e.g. a sense of security, good health, clean, sense of belonging)

Tradition (TR): Need to respect and commit to shared experiences and fate (e.g. religion, humble, respect, commitment)

Benevolence (BE): Concern for the welfare of close others in everyday life (e.g. true friendship, honesty, helpful, loyal)

Universalism (UN): Concern for the welfare of all people and for nature (e.g. social justice, nature) (Schwartz, 1992; Schwartz, 2006)

Table A10.1 Categorisation of meanings into value types

Meaning	Value type	Meaning	Value type
Personal development (child)	Self-direction	Relaxation	Hedonism
Time to yourself	Self-direction	Peace and quiet	Hedonism
Possibility to work at home	Self-direction	Pleasure	Hedonism
Access to information	Self-direction	Enjoyable	Hedonism
Space	Self-direction	Convenience	Hedonism
Saving time	Self-direction	Comfort	Hedonism
Creativity	Self-direction	Good quality products	Hedonism
Basic need	Self-direction	Efficient	Hedonism
Work concentrated	Self-direction	Break from work	Stimulation
Own company	Self-direction	Stimulating	Stimulation
Doing what you want to do	Self-direction	Getting away from things	Stimulation
Sense of freedom	Self-direction	Keeping busy	Stimulation
Sense of space	Self-direction	Eating together with family or friends	Benevolence
Place to retreat	Self-direction	Time fro one another	Benevolence
Child independent sooner	Self-direction	Social contact	Benevolence
Get to work early	Self-direction	Sharing things together	Benevolence
Close by	Self-direction	Being together with family or friends	Benevolence
Freedom of choice	Self-direction	Health	Security
Practical	Self-direction	Safety	Security
Hobby	Self-direction	Sense of safety	Security
		Sense of security	Security
		Harmony	Security
		Garden looks beautiful	Achievement
		Necessity	Tradition
		Nature	Universalism

Appendix 11 Use of the dwelling

Table A11.1 Use of the dwelling

Activity/dwelling feature	Kitchen	Living room	Dining room	Bedroom	Study	Outside	Other	Total
Cooking	372	0	0	0	0	0	0	372
Eating	61	136	49	0	0	7	7	260
Being together with the nuclear family*	13	61	6	0	0	7	7	94
Working at home	0	37	0	4	72	0	8	121
Children playing*	7	64	0	27	0	33	14	145
Hobby	5	53	0	4	45	12	33	152
Relaxing	11	349	0	21	16	17	8	422
Entertaining guests*	7	112	0	0	3	36	1	159
Being at the computer	4	88	1	13	105	0	25	236
Being outside	0	0	0	0	0	146	0	146
Gardening	0	0	0	0	0	261	0	261
Sleeping	0	0	0	143	0	0	0	143
Total	**480**	**900**	**56**	**212**	**241**	**519**	**103**	

*) More than one answer possible.

The activities cleaning and maintenance of the dwelling have not been asked where this activity took place.

The category 'other' consists of the garage, backroom, basement and attic.

Appendix 12 Preferred location and main reason for preference

Table A12.1 Relation between preferred location and main reason for preference (cut-off level >10)

	Accessibility amenities	Peace and quiet	Character of res. env.	Accessibility dwelling/res. env.	Availability dwelling	Feature of dwelling/ res. env.	Social contacts	Tradition	Activities	Total
City centre	95	0	22	23	10	0	0	0	16	166
Suburban	45	50	17	22	15	11	0	0	0	160
Rural	13	67	23	12	18	14	23	22	0	192
Total	**153**	**117**	**62**	**57**	**43**	**25**	**23**	**22**	**16**	**518**

Chi-square p=0.000

Appendix 13 Activities performed in the living room

Table A13.1 Activities performed in the living room

	Eating	Being together with the nuclear family	Working at home	Children playing	Hobby	Relaxing	Entertaining guests	Being at the computer	Total (row-%)
10-34 m²	48 (18%)	15 (6%)	10 (4%)	17 (6%)	5 (6%)	101 (38%)	30 (11%)	31 (12%)	267 (100%)
35-44 m²	37 (13%)	21 (7%)	14 (5%)	20 (7%)	20 (7%)	106 (37%)	36 (13%)	29 (10%)	283 (100%)
45+ m²	48 (14%)	24 (7%)	12 (4%)	26 (8%)	18 (5%)	141 (41%)	45 (13%)	27 (8%)	341 (100%)
Total	**133 (15%)**	**60 (7%)**	**36 (4%)**	**63 (7%)**	**53 (6%)**	**348 (39%)**	**111 (12%)**	**87 (10%)**	**891 (100%)**

Chi-square p=0.85

There is no significant difference in activities between the three sizes of the living room

Summary

The meaning of activities in the dwelling and residential environment

A structural approach in people-environment relations

Janine Meesters

Introduction (CH1)
The dwelling is a central setting in people's everyday life. This can be deduced from the many diverse meanings the dwelling has. Its meanings can be functional, for example having a roof above one's head. Its meanings can also be social, for example being together with family or friends. The dwelling can be an indicator of one's position in society. Or people may regard it as an economic investment. Most of these meanings are related (either directly or indirectly) to a wide variety of activities. In this light, the dwelling can be viewed as a centre of activities. Doing so indicates the connection between activities and meanings. Or as Arias (1993) says: "Use gives meaning to housing and at the same time meaning guides how housing is used."

That is why this study investigates everyday activities in the dwelling and the residential environment. It focuses on the meanings people attach to these activities. The connection between people and the environment (in this research specified as the dwelling and residential environment) is regarded as a reciprocal relation. On the one hand, people can affect the environment through their behaviour. On the other hand, the specific features of the environment allow certain behaviour. Embedded in the relation between people and the environment lies the meaning of dwelling. Gibson (1979) introduced the term 'affordance'; this is the relation between activities of people and features of the environment (Chemero, 2003). If features of the environment change, the use and meaning of those features can change as well. A city centre has different features than a suburb, and a rural type of residential environment is different again. To understand in what way city centre, suburban and rural types of residential environment differ from one another, we briefly characterise their main distinguishing features.

A city centre type of residential environment stands out by its high building density and its high level of amenities (see e.g. Feijten *et al.*, 2008). City centres have hospitals, institutions for higher education and concentrations of business services. Furthermore, there are theatres, museums and restaurants. Because of this high level of amenities, there is much to do in city centres; amenities make the city a lively place. Living in a city centre allows people to combine many diverse activities like their work, hobby and keeping up social contacts (see e.g. De Graaff and Karsten, 2007).

Many people with children consider the city centre a less attractive place to live. The high concentration of amenities also makes the city centre liable to congestion, pollution and crime. And its large scale gives people a sense of anonymity. Suburban residential environments lie at the rim of large cities, where they can provide people with more green space and a large single-family housing stock within reach of urban facilities. Some studies characterise suburbs as dull and mono-functional places (see e.g. Truijens, 2006; McDonogh, 2006). However, this image does not match up with people's experience. Many consciously choose to live in a suburb for its qualities of being a quiet, green residential environment within reach of urban facilities (see e.g. Metaal, 2005).

Compared to the suburbs, a rural type of residential environment provides more peace and quiet as well as green space. The number of amenities close by is rather limited, though. The image of rural areas is generally positive; besides a quiet residential environment and roomy dwellings, they offer plenty of space to enjoy nature. In addition, rural areas are considered a safe place to raise children (see e.g. Van Dam *et al.*, 2002; Karsten *et al.*, 2006).

This research concerns the meaning of activities in the dwelling and residential environment. It investigates the extent to which different types of residential environments afford different meanings. The meanings people attach to their everyday activities in the dwelling and residential environment form the focal point. In short, the aim of the present study is to provide *insight into the meaning of dwelling in a city centre, suburban and rural type of residential environment*.

Conceptualising the meaning of dwelling (CH2)

The conceptual framework underpinning this study has three pillars:

1. People-environment relations. An important starting point is the work of Rapoport on people-environment relations (Rapoport, 1990, 1995, 2001). He defines the environment as "a system of settings in which systems of activities take place" (1990). A setting is a defined area within the environment with specific features. The system of settings stands for every possible user option which the environment provides. In this research we describe systematically the relation between setting (dwelling feature), activity and meaning in what we call meaning structures. In this way we try to contribute to the literature dismantling the meaning of people-environment relations (2001).
2. The theory of affordances (Gibson, 1979) advances an explanation of how people perceive the environment. This theory describes the environment in an objective manner, specifying what properties the environment has (or specifying features of the environment) and the way in which people use them. The individual characteristics of people as well as the features of the environment determine this relation. If the characteristics and features are

such that a meaningful relation can exist, Gibson speaks of an affordance. For example, a child cannot ride the bike of an adult. The bike is too large and the child is too small. An adult can reach the pedals and therefore the bike affords riding it. In this research we look at the relation between activities of people and features in the environment. In this way we try to reveal the meaning of dwelling (see Chemero, 2003).

3. Means-end theory (Gutman, 1982; Reynolds and Gutman, 1988) is a conceptual structure that connects people's values to their choice behaviour. An important assumption of this theory is that people's behaviour is goal-directed and value-oriented. In other words, a consumer will only choose a product if he believes that (the use of) the product will contribute to realising his desired values and goals. Values imbue consequences with positive or negative valence. In order to realise a desirable consequence, a certain good must be consumed. A good contains different attributes. In order to make the right choice among different goods with different consequences, the consumer must learn which goods possess the attributes producing the desirable consequence. So, there is a link between attribute, consequence and value. This chain can be constructed by using the laddering technique. For example, we would like to know what meaning people attach to the dwelling feature 'garden'. The first question to the respondent would be "Why is a garden important to you?" The respondent might answer "I can sit in the sun" (link between attribute and consequence). Subsequently the interviewer asks "Why is it important for you to sit in the sun?" and the respondent answers "Sitting in the sun makes me feel completely relaxed" (link between consequence and value). The means-end chain was devised with a focus on products. An alternative approach is the goal structure (Pieters *et al.*, 1995). This approach was developed to focus on consequences. The links among various elements in the goal structure can help interpret the meaning of behaviour, because a goal structure shows the different goals people have and the relations of conflict and compatibility among these goals.

As stated before, this research investigates activities in the dwelling and residential environment. We asked the respondents the following questions:

1. Could you mention some activities in your dwelling/residential environment that are important to you? (ACTIVITY)
2. Where do you perform this activity? (SETTING)
3. Why is that activity important to you? (MEANING)

Using their answers we can create a meaning structure. A meaning structure comprises of a set of meanings that are relevant to a given behaviour (activities in the dwelling and residential environment) and attribute (dwelling features).

To place the meaning of dwelling in a broader, international context we use the universal value types of Schwartz. These were defined on the basis of cross-cultural research (Schwartz, 1992, 2006). A value type is a collection of diverse values. All the values people can have will fit into one of these types. The following universal values types occurred in this research:

- Self-direction: the need to be independent in thought and action (e.g. creativity, freedom, choosing your own goals, curiosity, independence)
- Stimulation: the need for variety and stimulation (e.g. variety, enterprising, excitement, novelty, challenge)
- Hedonism: the need to experience pleasure (e.g. pleasure, enjoying life, happiness)
- Security: the need for safety, harmony and stability of society, relationships and the self (e.g. sense of security, good health, cleanliness, sense of belonging)
- Tradition; the need to respect and commit to shared experiences and fate (e.g. religion, humility, respect, commitment)
- Benevolence; the concern for the welfare of close others in everyday life (e.g. true friendship, honesty, helpfulness, loyalty)
- Universalism; the concern for the welfare of all people and for nature (e.g. social justice, nature)

Context of dwelling (CH3)

Residents who participated in a large-scale housing preference study among homeowners in the Netherlands were asked to take part in our research on the meaning of dwelling. The housing preference study was commissioned by the Dutch association of property developers and building contractors (NVB Vereniging voor ontwikkelaars en bouwondernemers). It reveals the current and preferred housing situation of people with an above-average income in the Netherlands[1]. Over 60 per cent of all Dutch households have an above-average income. To only look at households with an above-average income was a deliberate decision. We assume that people with an above-average income have some choice on the housing market. That position makes it easier to discuss their motivations for the current or preferred dwelling situation. The housing preference study took place six months before our survey on the meaning of dwelling. Because we approached the same respondents, all information on their current and preferred housing situation was available. We could thus narrow our focus to the activities in the dwelling and residential environment and the underlying motives.

Most respondents who participated in the survey are aged between 40 and

1 Average household income: 1600 euro after tax per month in 2005 according to the Dutch Budget Institute, NIBUD.

54 or are over 55. A large share of the respondents live in either a two-person household (44%) or in a three- or more person household (45%). The income distribution is fairly even: a bit less than 30 per cent all respondents have an income of 1 to 1.5 times the average; 30 per cent have an income of 1.5 to 2 times the average; and one-third of all respondents have an income of more than twice the average. Most respondents have an intermediate (30%) or higher (35%) level of education. The current housing situation of the respondents is rather homogeneous. The majority own their dwelling (80%) and live in a single-family dwelling (74%) with a traditional architecture (71%) and a garden (72%). The dwelling has 4 or 5 rooms (56%) and a living room of 30-45 square metres (51%). Many respondents classify their residential environment as quiet (47%). Almost half of the respondents would be willing to move if they could find a dwelling that satisfies all their desires.

Activities in the dwelling and residential environment (CH4)
People perform a wide variety of activities in the dwelling and residential environment. These activities can be roughly divided into three groups. The first group contains family-related activities like taking the children to school, children playing and being together with the nuclear family. As can be expected, people who live in a three- or more person household mentioned these activities most. The second group contains leisure pastimes. Respondents mentioned a wide range of them like watching TV, reading, visiting friends, going out and cycling. The residential environment (city centre, suburban or rural) significantly affects some of these leisure pastimes. City centre dwellers go out (e.g. to a café, restaurant or cinema) more often than suburbanites or people living in rural areas. This can be easily explained by the features of the city centre; it provides many opportunities to go out (e.g. Burgers and Van der Land, 1997). In contrast, people who live in a rural area mentioned going to a club more often. In the literature on the rural type of residential environment, it is characterised as an environment where people are community oriented (Feijten *et al.*, 2008). This community spirit might manifest itself in club life. The third group of activities concerns household chores such as cleaning and doing daily errands. The type of residential environment does not affect this kind of activities. In other words, everyone needs to do daily errands, regardless of where they live.

The meaning of activities in the dwelling and residential environment (CH5)
The meaning structures show three dimensions of the meaning of activities in the dwelling. First, the dwelling is a place to be together with family and friends. This dimension is expressed in the activities of being together with the nuclear family and eating together with friends. The most frequently mentioned meanings for these activities are *social contacts*, *sharing things together* and *having time for one another*. All these meanings belong to the value

type benevolence. Second, the dwelling is place to relax; this mainly consists of watching TV and reading. In that regard, the meanings *relaxation* and *pleasure* are important: both belong to the value type hedonism. Finally, the dwelling is a refuge from the outside world, a place where people can determine what they want to do and who to invite over. This has always been so, but since the widespread use of the personal computer and the internet at home, this dimension has become more visible in the dwelling. Many people have internet access at home. This increases the possibility to work at home. By using the computer people have *access to information*. Through this free access to information, people can determine what they learn (*personal development*) or they can relax and *forget about work*. The value types self-direction and stimulation are important for this dimension.

The meaning structures of activities in the residential environment show that it is a functional space. For many people, the activities doing daily errands, going to work or taking the children to school are daily pursuits. People indicated that it was important that the residential environment allows them to perform these activities as quickly and efficiently as possible. Meanings such as *close by*, *saving time*, *convenience* and *comfort* are mentioned many times. These belong to the value types self-direction and hedonism. Furthermore, the residential environment is a place for leisure pastimes. That is expressed in social activities like meeting friends at a bar (value type benevolence) and cultural activities like going to the theatre. Exercising is also considered a leisure pastime. *Health* is an important meaning for doing sport, but people also experience this as a relaxing pastime (value type security and hedonism).

Comparing the meaning of dwelling in a city centre, suburban and rural type of residential environment (CH6)

The city centre is distinguished from the other two types of residential environment through the activity going out and the value type stimulation, which are connected to it. This distinguishing feature of the city centre can be explained by referring to the literature on the specific characteristics of the city centre. The city has a large supply of various amenities; concentrations of business services, art and culture, education etc. This abundance of amenities in a compact area allows people to engage in many activities. The amenities in the field of entertainment seem to give the city a special appeal. This is expressed by meanings such as *get away from things*, *forget about work* and *stimulation*.

A suburban type of residential environment offers on the one hand, a green residential environment with single-family dwellings and, on the other hand, proximity to urban amenities. The most frequently mentioned reasons for the preference to live in a suburb are peace and quiet and accessibility of amenities. This duality is reflected in the meanings *necessity* and *nature*. Suburbanites seem to appreciate living in a dwelling with a garden (meaning nature).

Table 1 Distinguishing activities and meanings of a city centre, suburban and rural type of residential environment

Type of residential environment	Activity	Meaning
City centre	- going out	- get away from things, forget about work, stimulation
Suburban	- gardening	- necessity
	- recreation	- nature
	- children playing	- sense of safety, personal development of the child
	- taking children to school	- safety
Rural	- children playing	- sense of safety, personal development of the child
	- being together with the nuclear family	- having time for one another
	- taking children to school	- safety

But a considerable share of people experience the upkeep as a burden (meaning necessity). The link between gardening and necessity does not occur in a city centre type of residential environment. And in a rural type of residential environment it is much less evident; few people in rural areas experience the upkeep of the garden as a burden. A possible explanation might be found in the available green space close to the dwelling and in the residential environment. In the city centre, the amount of available green space (both private and public) is limited. People who like gardening will consciously choose for a dwelling with a garden. Having a dwelling with a garden is much more common in suburban and rural types of residential environment, where most of the housing stock has a garden. It seems that a considerable share of suburbanites want the advantage of the green space (to enjoy sitting outside in their garden) but do not want to accept what they see as its disadvantage (the upkeep). In a rural type of residential environment, people seem to have a more pronounced preference for a green residential environment. Compared to the suburbanites, they consequently experience the upkeep of the garden as less burdensome.

Finally, the rural type of residential environment distinguishes itself by family-related activities like children playing and taking the children to school. The meanings *personal development of the child* and *safety* are mentioned considerably more often in a rural type of residential environment, compared to a city centre and to a lesser extent the suburbs. Apparently people deem a rural type of residential environment as suitable for growing children. This is reflected in the distribution of household groups over the three types of residential environment; of all people who live in a three- or more person household, the largest share lives in a rural area. In addition, the meanings *peace and quiet*, *social contacts* and *tradition* are important in a rural type of residential environment. Table 1 summarises the most distinguishing activities and meanings of a city centre, suburban and rural type of residential environment.

Conclusion (CH7)

Despite the differences in activities and meanings found among the three types of residential environment, the direct effect of the type of residential environment on the meaning of dwelling seems to be limited. The data de-

rived from this research show that people do not tend to move to an entirely different type of residential environment. This is also shown by other research (Muhammad *et al.*, 2007; Feijten *et al.*, 2008). Moreover, the direct effect of the type of residential environment on activities is diminishing with increasing mobility and advances in ICT that make it possible to work from home. People seem to opt for a fixed residence (based on earlier experiences) and take that as a base from which to organise the domains of work and leisure. That is why the types of residential environment should retain their strong distinguishing features. The data reported here show that the city distinguishes itself as a place to be entertained and where many amenities are close by. The suburb distinguishes itself as a quiet residential environment within reach of urban facilities. And a rural type of residential environment distinguishes itself by its peace and quiet and prevailing community spirit. Reviewing the meaning structures, it seems that the suburban type of residential environment offers most scope for change. Many suburbanites enjoy having a garden and a green residential environment (meaning nature connected to the activities gardening and recreation), though they find the upkeep burdensome. This leaves room for a new balance in private and public green space in the suburban type of residential environment. Developers could seize upon this as an opportunity to lay out (semi-)public green space or take over the upkeep of private gardens.

The aim of this research was to make people-environment relations explicit and specific. The meaning structures provide insight into the relation among settings, activities and meanings. Because this relation is so specific, it is easy to demonstrate what would happen if the relation to one of the three elements were to shift. For example, by adding the activity children playing, it is very likely that the meanings *personal development of the child* and *sense of safety* would become apparent in the meaning structure. The analyses show that these are important functions of the living room and garden for families with children. Furthermore, the meaning structures reveal that families with growing children pose different demands on the dwelling and residential environment than people without children (or without growing children). This approach makes these demands specific in terms of the setting, activity and meaning. Another example concerns the meaning structure of the private outdoor space. It is clearly shown that the larger the private outdoor space, the more activities people would perform in that space. Gardening is mainly mentioned in relation to the garden, and *keeping busy* is an important meaning for gardening. By removing gardening, the meaning keeping busy will also disappear from the meaning structure. So a garden affords keeping busy, whereas a balcony does not. The meaning structures prove that spatial qualities of the private outdoor space affect the meaning of that space. Another advantage of this approach is that it is easy to compare different groups; in this research we compared people living in different types of residential envi-

ronment. But it would also be possible to zoom in on the different uses and meanings of the dwelling among diverse household groups or age groups. A disadvantage of this approach is that network analysis does not allow one to investigate the causes of the differences between groups. In other words, network analysis does not provide insight into the causality of difference; one can only describe the differences between the networks. This will be given due attention in future research.

Samenvatting (Dutch Summary)

De betekenis van activiteiten in de woning en woonomgeving

Een structurele aanpak van mens-omgeving relaties

Janine Meesters

Aanleiding en doel van het onderzoek (H1)

De woning is een belangrijk element in het leven van alledag; dit is af te leiden van de grote hoeveelheid betekenissen die aan de woning verbonden zijn. De woning heeft een functionele betekenis; deze biedt bescherming tegen weer en wind, en de woning is een plek waar je persoonlijke eigendommen kan plaatsen. De woning heeft ook een sociale betekenis; de woning is een plek om samen te zijn met familie, of om vrienden uit te nodigen. De woning heeft ook een economische betekenis; sommige mensen zien de woning als een investeringsgoed. Maar het kan ook iemands sociaaleconomische positie weerspiegelen; dit ligt bijvoorbeeld verscholen in het woord herenhuis. Veel van deze betekenissen zijn direct of indirect verbonden aan activiteiten die plaatsvinden in en om de woning. Vanuit dat oogpunt is de woning een centrum van activiteiten. Arias (1993) formuleerde dat als volgt: "Gebruik geeft betekenis aan de woning en tegelijkertijd bepaalt betekenis de manier waarop de woning wordt gebruikt."

Dit onderzoek focust op activiteiten in de woning en woonomgeving en de betekenis die mensen daaraan geven. De relatie tussen mens en omgeving (in dit onderzoek gespecificeerd als woning en woonomgeving) wordt beschouwd als een tweezijdige relatie. Dat betekent enerzijds dat mensen de omgeving kunnen beïnvloeden en dat anderzijds de omgeving ook een bepaald gedrag toestaat. In deze tweezijdige relatie tussen mens en omgeving wordt de betekenis van wonen zichtbaar. Gibson (1979) introduceerde het begrip affordance; dit is de relatie tussen activiteiten van mensen en kenmerken van de omgeving (Chemero, 2003). Als kenmerken van de omgeving veranderen, kunnen ook het gebruik en de betekenis daarvan veranderen. Zo heeft een stadscentrum andere kenmerken dan een suburb en een landelijke woonomgeving verschilt weer van een suburbane woonomgeving. Om goed inzicht te krijgen op welke manier centrumstedelijke, suburbane en landelijke woonomgevingen van elkaar verschillen geven we een korte karakterschets van deze drie typen woonomgevingen.

Een centrumstedelijke woonomgeving kenmerkt zich door een hoge bebouwingsdichtheid en door een hoog voorzieningenniveau (bijv. Feijten e.a., 2008). Daarbij kan men denken aan ziekenhuizen, onderwijsinstellingen en centra voor zakelijke dienstverlening, maar ook theaters, musea en restaurants. Door deze grote concentratie van verschillende voorzieningen is er veel te

doen in een stad; dat geeft de stad een levendig karakter. Ook geven mensen aan dat door in een stad te wonen zij verschillende activiteiten gemakkelijk kunnen combineren, zoals werk, hobby en het onderhouden van sociale contacten (bijv. De Graaff en Karsten, 2007). Veel mensen met kinderen vinden de stad een minder aantrekkelijke woonomgeving. Doordat er zoveel voorzieningen op een relatief klein oppervlak zijn, veroorzaakt dit ook (verkeers)opstoppingen, vervuiling, criminaliteit en door de grootschaligheid een gevoel van anonimiteit. Suburbane woonomgevingen zijn te vinden aan de rand van de stad en hebben meer groene ruimte, een ruime voorraad aan eengezinswoningen en liggen binnen bereik van stedelijke voorzieningen. In sommige studies wordt een suburbane woonomgeving negatief afgeschilderd; ze zou een mono-functioneel, saai en homogeen karakter hebben (Lupi, 2003; McDonogh, 2006). Dit beeld komt niet overeen met de beleving van de meeste bewoners; veel mensen kiezen juist voor een suburbane woonomgeving vanwege de eerder beschreven kwaliteiten; een suburb biedt meer ruimte voor minder geld, maar wel binnen bereik van stedelijke voorzieningen (bijv. Metaal, 2005).

Een landelijke woonomgeving biedt weer meer groen en ruimte dan een suburbane woonomgeving. Daar staat tegenover dat er een beperkt aantal voorzieningen in de nabijheid ligt. Het beeld dat de meeste mensen van een landelijke woonomgeving hebben is positief; het is er rustig, groen, ruime woningen, er is volop ruimte om van de natuur te genieten. Daarnaast wordt het vaak omschreven als een veilige plek om kinderen te laten opgroeien (bijv. Van Dam e.a., 2002; Karsten e.a., 2006).

In dit onderzoek kijken we enerzijds naar de betekenis van het wonen en anderzijds onderzoeken we in welke mate de betekenis van het wonen verschilt tussen een centrumstedelijke, suburbane en landelijke woonomgeving. Daarbij staat de betekenis centraal die de bewoner geeft aan zijn/haar activiteiten in de woning en woonomgeving. Kortom, het doel van dit onderzoek is: *inzicht krijgen in de betekenis van wonen in een centrumstedelijke, suburbane en landelijke woonomgeving.*

Conceptueel kader en methode (H2)

Het conceptueel kader dat ten grondslag ligt aan dit onderzoek heeft drie pijlers:

1. Mens-omgeving relaties. Een belangrijk uitgangspunt is het werk van Rapoport over mens-omgeving relaties (Rapoport, 1990, 1995, 2001). Hij definieert de omgeving als een systeem van 'settings' waarin systemen van activiteiten plaats vinden. Een setting is een afgebakend gebied in de omgeving, in dit onderzoek de woning en de woonomgeving. In dit onderzoek beschrijven we systematisch de relatie tussen setting (woningkenmerk), activiteit en betekenis, in zogenaamde betekenisstructuren. Op deze manier probeert dit onderzoek een bijdrage te leveren aan het ontmantelen van mens-omgeving relaties (zie Rapoport, 2001).

2. In de theorie van affordances (Gibson, 1979) staat de relatie tussen het individu en kenmerken in de omgeving centraal. Zowel de eigenschappen van het individu als de eigenschappen van het kenmerk zijn bepalend voor deze relatie. Als de kenmerken zodanig zijn dat er een betekenisvolle relatie kan ontstaan, dan spreekt Gibson van een affordance. Bijvoorbeeld een kind kan niet op een fiets voor volwassenen rijden; de fiets is te groot en het kind te klein. Voor een volwassen persoon biedt deze fiets wel een affordance; de persoon is groot genoeg om bij de pedalen te komen. In dit onderzoek kijken we naar de relatie tussen activiteiten van mensen en kenmerken in de omgeving. Op deze manier proberen we de betekenis van wonen te achterhalen (zie Chemero, 2003).
3. Doel-middelen hiërarchie (Gutman, 1982; Reynolds en Gutman, 1988). Deze theorie legt een relatie tussen de producten die consumenten kiezen en de onderliggende waarden van die keuze. Een belangrijke aanname van de theorie is dat gedrag waarden-georiënteerd en doel-gericht is. Met andere woorden, een consument zal alleen voor een product kiezen, als hij denkt dat (het gebruik van) het product zal bijdragen aan het realiseren van gewenste waarden en doelen. Waarden hebben consequenties met een positieve of negatieve bindingskracht. Om een gewenst doel te realiseren, wordt een bepaald product geconsumeerd. Een product heeft verschillende attributen. Om de juiste keuze te maken tussen de verschillende producten, moet de consument leren welke attributen het product bezit die hem dichterbij zijn gewenste doel brengt. Dus, er is een link tussen attribuut, consequentie en waarde. Met behulp van de laddering-techniek wordt deze keten geconstrueerd. We geven een voorbeeld; we willen weten welke betekenis mensen geven aan het attribuut tuin. De eerste vraag aan de respondent is: “Waarom is een tuin belangrijk voor u?” De respondent antwoordt: “Ik kan lekker in de zon zitten” (link tussen attribuut en consequentie). Vervolgens vraagt de interviewer: “Waarom is het voor u belangrijk om in de zon te zitten?” De respondent: “Door in de zon te zitten kom ik helemaal tot rust” (link tussen consequentie en waarde). De doel-middelen hiërarchie focust op producten. Een alternatieve aanpak van de doel-middelen hiërarchie is de doel-structuur (Pieters e.a., 1995). Deze aanpak focust op consequenties. Een doel-structuur helpt de betekenis van gedrag te interpreteren; het geeft inzicht in de manier waarop mensen verschillende doelen nastreven.

Dit onderzoek focust zoals gezegd op activiteiten in de woning en woonomgeving. We hebben aan bewoners gevraagd:

1. Kunt u een aantal activiteiten in uw woning/woonomgeving noemen, die voor u belangrijk zijn? (ACTIVITEIT)
2. Waar voert u die activiteit uit? (SETTING)
3. Waarom is die activiteit belangrijk voor u? (BETEKENIS)

Met behulp van deze vragen hebben we zogenaamde betekenisstructuren opgesteld. Een betekenisstructuur omvat een set van betekenissen die relevant zijn voor een bepaald gedrag (activiteiten in de woning en woonomgeving) en attribuut (kenmerk van de woning).

Om de betekenis van het wonen in een breder, internationaal kader te kunnen plaatsen maken we gebruik van de universele waardedomeinen van Schwartz. Op basis van cross-cultureel onderzoek heeft Schwartz universele waardedomeinen gedefinieerd (Schwartz, 1992, 2006). Alle voorkomende waarden kunnen worden ondergebracht in een van deze universele waardedomeinen. In dit onderzoek naar de betekenis van het wonen komen de volgende waardedomeinen van Schwartz voor:

- Zelfbestemming; de behoefte om onafhankelijk in denken en doen te zijn (bijvoorbeeld creativiteit, vrijheid, onafhankelijkheid)
- Stimulatie; de behoefte aan afwisseling en stimulatie (bijvoorbeeld afwisseling, ondernemend, opwinding, uitdaging)
- Hedonisme; de behoefte om genot te ervaren (bijvoorbeeld plezier, genieten van het leven, geluk)
- Veiligheid; de behoefte aan veiligheid, harmonie en stabiliteit van de maatschappij, relaties en jezelf (bijvoorbeeld geborgenheid, goede gezondheid, ergens toe behoren)
- Traditie; de behoefte aan respect voor en betrokkenheid bij gedeelde ervaringen en overtuigingen (bijvoorbeeld religie, respect, betrokkenheid)
- Liefdadigheid; de bezorgdheid over het welzijn van nabije anderen (bijvoorbeeld echte vriendschap, eerlijkheid, behulpzaamheid, loyaliteit)
- Universalisme; de bezorgdheid over het welzijn van alle mensen en de natuur (bijvoorbeeld sociale rechtvaardigheid, natuur).

Context van wonen; de sociaal demografische kenmerken en woonsituatie van respondenten (H3)

Bewoners, die hebben meegewerkt aan een grootschalig woonwensenonderzoek onder huizenkopers in Nederland, zijn benaderd om ook deel te nemen aan het onderzoek naar de betekenis van wonen. Het woonwensenonderzoek is uitgevoerd in opdracht van de NVB Vereniging voor ontwikkelaars en bouwondernemers. Dit onderzoek brengt de huidige en gewenste woonsituatie van mensen met een bovenmodaal inkomen[2] in Nederland in kaart. Uitgangspunt hierbij is dat mensen met een hoger inkomen meer keuze hebben op de woningmarkt, in vergelijking tot mensen met een laag inkomen. Naarmate een woonconsument meer keuzemogelijkheden heeft, zal naar verwachting ook de achterliggende betekenisstructuur een belangrijkere rol gaan spelen in het keuzeproces. Het woonwensenonderzoek vond een half jaar voor de enquête

2 Gemiddeld huishoudinkomen: € 1.600 netto per maand (NIBUD, 2005).

naar de betekenis van wonen plaats. Door dezelfde mensen te benaderen was de huidige en gewenste woonsituatie al in kaart gebracht en kon er direct ingegaan worden op de activiteiten in de woning en woonomgeving en de achterliggende motieven.

De meeste respondenten die hebben deelgenomen aan de studie zijn in de leeftijd van 40-54 of 55+. Een groot deel woont of in een tweepersoonshuishouden (44%) of in een drie- en meerpersoonshuishouden (45%). Er is een geleidelijk verloop van inkomen; iets minder dan 30 procent van de respondenten heeft een inkomen van 1 tot 1,5 keer modaal; 30 procent heeft een inkomen van 1,5 tot 2 keer modaal en 33 procent van de respondenten heeft een inkomen van meer dan twee keer modaal. De meeste respondenten hebben of een middelbare beroepsopleiding (30%) of een hogere beroepsopleiding (35%). De huidige woonsituatie van de respondenten is redelijk homogeen; het overgrote deel van de respondenten is eigenaar-bewoner (80%), woont in een eengezinswoning (74%) van traditionele architectuur (71%) en heeft de beschikking over een tuin (72%). De woning heeft 4-5 kamers (56%) en een woonkamer van 30-45 vierkante meter (51%). Veel respondenten typeren hun buurt als rustig (47%). Bijna de helft van de respondenten geeft aan te willen verhuizen, als zij de woning die aan al hun wensen voldoet voorbij zien komen.

Activiteiten in de woning en woonomgeving (H4)

Mensen voeren een grote variëteit aan activiteiten uit in de woning en woonomgeving. De activiteiten zijn globaal in drie groepen te verdelen. De eerste groep omvat familie gerelateerde activiteiten zoals kinderen naar school brengen, kinderen spelen en samen zijn met het gezin. Zoals men kan verwachten, noemen mensen die tot een drie- of meerpersoonshuishouden behoren deze activiteiten relatief het meest. De tweede groep omvat vrijtijdsbestedingen. Respondenten hebben een zeer breed scala aan activiteiten genoemd, zoals televisie kijken, lezen, vrienden bezoeken, uitgaan en fietsen. Woonomgeving (centrumstedelijke, suburbane of landelijke woonomgeving) heeft een significant effect op een aantal vrijetijdsbestedingen. Mensen die in het centrum van een stad wonen, hebben bijvoorbeeld vaker uitgaan (naar een café, restaurant of bioscoop) genoemd dan mensen die in een suburbane of landelijke woonomgeving wonen. Dit kan gemakkelijk worden verklaard aan de hand van de kenmerken van een centrumstedelijke woonomgeving; deze bevat veel mogelijkheden om uit te gaan (bijv. Burgers en Van der Land, 1997). Daarentegen hebben mensen die in een landelijke woonomgeving wonen, de activiteit naar een vereniging gaan vaker genoemd dan stadsbewoners. In de literatuur over landelijke woonomgeving, wordt het landelijk gebied gekenschetst als een omgeving waar mensen betrokken zijn bij de gemeenschap (Feijten e.a., 2008). Dit kan tot uiting komen in verenigingsleven. De derde groep activiteiten omvat huishoudelijke taken als schoonmaken en

de dagelijkse boodschappen doen. Voor deze groep activiteiten heeft woonomgeving geen effect. Met andere woorden; iedereen moet zijn boodschappen halen, onafhankelijk van waar men woont.

Betekenissen van activiteiten in de woning en woonomgeving (H5)
De betekenisstructuren laten drie dimensies van de betekenis van activiteiten in de woning zien. Ten eerste is de woning een plaats om samen te zijn met het gezin en vrienden. Deze dimensie komt tot uitdrukking in activiteiten als samen zijn met het gezin en samen eten met vrienden. De meest genoemde betekenissen voor deze activiteiten zijn *sociale contacten*, *samen dingen delen* en *tijd hebben voor elkaar*. Al deze betekenissen behoren tot het waardedomein liefdadigheid. Ten tweede is de woning een plek voor vrijetijdsbestedingen. De meest genoemde activiteit in de woning is ontspannen; dat voornamelijk bestaat uit televisie kijken en lezen. Daarbij zijn de betekenissen *ontspanning* en *genieten* belangrijk. Beide behoren tot het waardedomein hedonisme. Tot slot is de woning een plek om je af te schermen van de buitenwereld; een plek waar de bewoner zelf kan bepalen wat te doen en wie uit te nodigen. Dit is altijd zo geweest, maar door de komst van de computer en internet is deze dimensie nog zichtbaarder geworden in de woning. Veel mensen hebben toegang tot internet thuis. Dit vergroot de mogelijkheid om thuis te werken. Want, door gebruik te maken van de computer hebben zij *toegang tot informatie*. Door de vrije toegang tot informatie kunnen mensen zelf bepalen wat zij leren (*persoonlijke ontwikkeling*) of dat zij juist ontspanning zoeken en zo hun *dagelijkse beslommeringen kunnen vergeten*. De waardedomeinen zelfbestemming en stimulatie zijn hiervoor belangrijk.
De betekenisstructuren van activiteiten in de woonomgeving laten zien dat de woonomgeving enerzijds een functionele ruimte is. Voor veel mensen zijn activiteiten als boodschappen halen, naar het werk gaan of de kinderen naar school brengen een dagelijks terugkerende bezigheid. Mensen hebben aangegeven het belangrijk te vinden dat de woonomgeving hun toestaat deze activiteiten zo snel en efficiënt mogelijk uit te voeren. Betekenissen als *dichtbij*, *tijd besparen*, *gemak* en *comfort* zijn veel genoemd. Deze behoren toe aan de waardedomeinen zelfbestemming en hedonisme. Anderzijds is de woonomgeving een plek voor vrije tijd. Dat uit zich in sociale activiteiten als vrienden ontmoeten in een bar (waardedomein liefdadigheid) en culturele activiteiten als naar een theatervoorstelling gaan. Betekenissen als *persoonlijke ontwikkeling*, *stimulatie*, *er even tussenuit* zijn veel genoemd (waardedomeinen zelfbestemming en stimulatie). Ook lichamelijke beweging is een onderdeel van vrijetijdsbesteding. Voor de activiteit sporten is *gezondheid* een veel genoemde betekenis, maar sporten wordt ook ervaren als een ontspannende activiteit (waardedomeinen veiligheid en hedonisme).

Verschillen in de betekenis van wonen tussen een centrumstedelijke, suburbane en landelijke woonomgeving (H6)

De stad onderscheidt zich door de activiteit uitgaan en het waardedomein stimulatie dat daaraan verbonden is. Dit onderscheidende kenmerk van de stad kan aan de hand van de literatuur over de specifieke eigenschappen van de stad worden verklaard. De stad heeft een groot voorzieningenaanbod op allerlei gebieden; zakelijke dienstverlening, kunst en cultuur, opleidingen etc. Deze veelheid aan voorzieningen in een compact gebied maakt het mogelijk om een veelheid aan activiteiten te ontplooien. De voorzieningen op het gebied van vermaak lijken vooral een bijzondere aantrekkingskracht te geven aan de stad. Dit komt tot uitdrukking in betekenissen als *er even tussenuit*, *werk vergeten* en *stimulering*.

Een suburbane woonomgeving biedt enerzijds een groene woonomgeving met eengezinswoningen en anderzijds de nabijheid van grootstedelijke voorzieningen. De meest genoemde redenen om in een suburbane woonomgeving te willen wonen zijn dan ook rust en bereikbaarheid van voorzieningen. Deze tweezijdigheid komt terug in de betekenissen *natuur* en *noodzaak*. Enerzijds lijken mensen die in een suburb wonen hun woning met tuin te waarderen (betekenis natuur). Anderzijds ervaart een aanzienlijk deel het onderhoud van de tuin als een last (betekenis noodzaak). De link tussen tuinieren en noodzaak komt niet voor in een centrumstedelijke woonomgeving. En in een landelijke woonomgeving veel minder; minder mensen ervaren tuinieren als een last. Een mogelijke verklaring kan gezocht worden in de beschikbare groene ruimte bij de woning en in de woonomgeving. In de stad is de beschikbare groene ruimte (zowel privé als publiek) beperkt. Mensen die van tuinieren houden, zullen dus bewust kiezen voor een woning met tuin. In een suburbane en landelijke woonomgeving is een tuin veel meer gemeengoed; het overgrote deel van de woningen heeft een tuin. Het lijkt erop dat een aanzienlijk deel van de mensen die in een suburbane woonomgeving wonen, wel de lusten van het groen willen (lekker buiten zitten) maar niet de lasten (onderhoud van de tuin). In een landelijke woonomgeving lijken mensen toch een meer uitgesproken voorkeur voor een groene woonomgeving te hebben, en daarmee het onderhoud als minder belastend ervaren dan mensen in de suburbs.

Tot slot onderscheidt een landelijke woonomgeving zich door familie gerelateerde activiteiten als kinderen spelen en kinderen naar school brengen. De betekenissen *persoonlijke ontwikkeling van het kind* en *veiligheid* zijn beduidend vaker genoemd in een landelijke woonomgeving dan in een centrumstedelijke en in mindere mate in een suburbane woonomgeving. Blijkbaar ervaren mensen een landelijke woonomgeving als geschikt voor opgroeiende kinderen. Dit is ook terug te vinden in de verdeling van de huishoudengroepen over de drie woonomgevingen; van alle mensen die in een drie- en meerpersoonshuishouden wonen, woont het grootse deel in een landelijke omgeving. Daarnaast zijn ook waarden als *rust*, *sociale contacten* en *traditie* belangrijk in een

Tabel 1 Onderscheidende activiteiten en betekenissen van een centrumstedelijke, suburbane en landelijke woonomgeving

Woonomgeving	Activiteit	Betekenis
Stad	- uitgaan	- er even tussenuit, werk vergeten, stimulering
Suburb	- tuinieren	- noodzaak
	- recreatie	- natuur
	- kinderen spelen	- gevoel van veiligheid, persoonlijke ontwikkeling kind
	- kinderen naar school brengen	- veiligheid
Landelijk gebied	- kinderen spelen	- gevoel van veiligheid, persoonlijke ontwikkeling kind
	- samen zijn met het gezin	- tijd hebben voor elkaar
	- kinderen naar school brengen	- veiligheid

landelijke omgeving. Tabel 1 vat de meest onderscheidende activiteiten en betekenissen van een centrumstedelijke, suburbane en landelijke woonomgeving samen.

Conclusie (H7)

Ondanks dat er een aantal verschillen zijn in activiteiten en betekenissen tussen de drie woonomgevingen, lijkt het directe effect van woonomgeving op de betekenis van wonen beperkt. De data in dit onderzoek laten zien dat mensen niet snel naar een ander type woonomgeving verhuizen. Dit komt ook in andere recente studies naar voren (Muhammad e.a., 2007; Feijten e.a., 2008). Bovendien neemt de directe afhankelijkheid van de woonomgeving op activiteiten af door bijvoorbeeld een toenemende mobiliteit en ontwikkelingen in ICT die het mogelijk maken om vanuit huis te werken. Mensen lijken te kiezen voor een vaste woonplek (op basis van eerdere ervaringen) en vanuit daar de verschillende domeinen van werk en vrije tijd te organiseren. Daarom zouden de woonomgevingen hun sterke, onderscheidende kenmerken moeten handhaven. Uit de data blijkt dat de stad zich onderscheidt als een plek voor vermaak en waar veel voorzieningen binnen bereik zijn. De suburb onderscheidt zich door enerzijds rust en ruimte te bieden en anderzijds door de bereikbaarheid van stedelijke voorzieningen. En een landelijke woonomgeving onderscheidt zich in rust, ruimte en gemeenschapszin. De betekenisstructuren in ogenschouw nemend lijkt er in een suburbane woonomgeving de meeste ruimte te bestaan voor verandering. Veel mensen die in een suburb wonen willen wel de lusten van een eigen tuin en een groene woonomgeving (betekenis natuur; gekoppeld aan de activiteiten tuinieren en recreatie), maar niet de lasten (noodzaak van het onderhoud). In een suburbane woonomgeving zou er dus naar een nieuwe balans tussen privé en openbare (groene) ruimte kunnen worden gezocht. Ontwikkelaars zouden hier op in kunnen springen door bijvoorbeeld aanleg van (semi-)openbaar groen of het overnemen van onderhoud van de privé tuin.

Dit onderzoek heeft getracht om de relatie tussen mens en omgeving expliciet en specifiek te maken. De betekenisstructuren maken inzichtelijk op welke manier kenmerken in de omgeving, activiteiten en betekenissen aan elkaar zijn verbonden. Doordat deze relatie zo specifiek is, kan men ook inzichtelijk maken wat er gebeurt als een van deze drie onderdelen verandert. Een

voorbeeld: door het toevoegen van de activiteit kinderen spelen, is de kans groot dat de betekenis *persoonlijke ontwikkeling van het kind* en *veiligheid* ook naar voren komen. De analyses hebben laten zien dat dit belangrijke functies van de woonkamer en de tuin zijn voor gezinnen met kinderen. Ook maakt de betekenisstructuur inzichtelijk dat mensen met opgroeiende kinderen andere eisen stellen aan een woning en woonomgeving, dan mensen zonder kinderen (of zonder opgroeiende kinderen). Bovendien geeft het aan welke specifieke eisen dat zijn. Een ander voorbeeld: uit de betekenisstructuur van de buitenruimte bleek duidelijk dat hoe groter de buitenruimte, des te meer activiteiten mensen toekenden aan de ruimte. Tuinieren is vooral genoemd in de tuin en *lekker bezig zijn* is een belangrijke betekenis voor tuinieren. Door het weglaten van tuinieren, vervalt ook de betekenis lekker bezig zijn. Dus een tuin heeft de betekenis lekker bezig zijn, terwijl een balkon dat niet heeft. De betekenisstructuur maakt inzichtelijk dat de ruimtelijke eigenschappen van een buitenruimte invloed hebben op de betekenis van die ruimte. Een ander voordeel van deze aanpak is dat men gemakkelijk groepen met elkaar kan vergelijken; in dit onderzoek zijn mensen die in verschillende woonomgevingen wonen met elkaar vergeleken, maar het is ook mogelijk in te zoomen op verschillen in gebruik en betekenis van de woning tussen huishoudengroepen of leeftijdsgroepen. Een nadeel van de methode is dat netwerkanalyse niet toelaat om de oorzaak van verschillen te onderzoeken. Netwerkanalyse geeft geen inzicht in de causaliteit van verschillen, waardoor men alleen maar de verschillen tussen de netwerken kan beschrijven. Dat is dan ook zeker een punt van aandacht in vervolgonderzoek.

Curriculum Vitae

Janine Meesters was born in Amersfoort, the Netherlands on July 12, 1981. After obtaining her VWO diploma from the Johannes Fontanus College in Barneveld in 1999, she went on to study Household and Consumer Sciences at Wageningen University. In 2003 she spent three months in Ireland investigating perceived social safety among residents of an urban regeneration area, Ballymun estate in Dublin. Then she spent six months at the Faculty of Architecture at Delft University of Technology, where she took courses in Housing Management and Housing Policy. She completed her studies with a thesis on the estimated need for housing with care provisions in the Netherlands, which she wrote during an internship at the consultancy firm Quintis. She graduated in June 2004, and that October she took a PhD position at the OTB Research Institute for Housing, Urban and Mobility Studies. At the same time, she has been working at the editorial office of the Journal of Housing and the Built Environment. In addition, she has been involved in several contract research projects on housing preferences for urban and suburban living. After receiving her doctorate, she will continue working as a researcher for the OTB.

Sustainable Urban Areas

1. Beerepoot, Milou, **Renewable energy in energy performance regulations. A challenge for European member states in implementing the Energy Performance Building Directive**
2004/202 pages/ISBN 90-407-2534-9

2. Boon, Claudia and Minna Sunikka, **Introduction to sustainable urban renewal. CO_2 reduction and the use of performance agreements: experience from The Netherlands**
2004/153 pages/ISBN 90-407-2535-7

3. De Jonge, Tim, **Cost effectiveness of sustainable housing investments**
2005/196 pages/ISBN 90-407-2578-0

4. Klunder, Gerda, **Sustainable solutions for Dutch housing. Reducing the environmental impact of new and existing houses**
2005/163 pages/ISBN 90-407-2584-5

5. Bots, Pieter, Ellen van Bueren, Ernst ten Heuvelhof and Igor Mayer, **Communicative tools in sustainable urban planning and building**
2005/100 pages/ISBN 90-407-2595-0

6. Kleinhans, R.J., **Sociale implicaties van herstructurering en herhuisvesting**
2005/371 pages/ISBN 90-407-2598-5

7. Kauko, Tom, **Comparing spatial features of urban housing markets. Recent evidence of submarket formation in metropolitan Helsinki and Amsterdam**
2005/163 pages/ISBN 90-407-2618-3

8. Kauko, Tom, **Urban housing pattern in a tide of change. Spatial structure and residential property values in Budapest in a comparative perspective**
2006/142 pages/ISBN 1-58603-679-3

9. Sunikka, Minna Marjaana, **Policies for improving energy efficiency in the European housing stock**
2006/251 pages/ISBN 1-58603-649-1

See next page

10. Hasselaar, Evert, **Health performance of housing. Indicators and tools**
2006/298 pages/ISBN 1-58603-689-0

11. Gruis, Vincent, Henk Visscher and Reinout Kleinhans (eds.), **Sustainable neighbourhood transformation**
2006/158 pages/ISBN 987-1-58603-718-5

12. Trip, Jan Jacob, **What makes a city? Planning for 'quality of place'. The case of high-speed train station area redevelopment**
2007/256 pages/ISBN 978-1-58603-716-1

13. Meijers, Evert, **Synergy in polycentric urban regions. Complementarity, organising capacity and critical mass**
2007/182 pages/ ISBN 978-1-58603-724-6

14. Chen, Yawei, **Shanghai Pudong. Urban development in an era of global-local interaction**
2007/368 pages/ISBN 978-1-58603-747-5

15. Beerepoot, Milou, **Energy policy instruments and technical change in the residential building sector**
2007/238 pages/ISBN 978-1-58603-811-3

16. Guerra Santin, Olivia, **Environmental indicators for building design. Development and application on Mexican dwellings**
2008/124 pages/ISBN 978-1-58603-894-6

17. Van Mossel, Johan Hendrik, **The purchasing of maintenance service delivery in the Dutch social housing sector. Optimising commodity strategies for delivering maintenance services to tenants**
2008/283 pages/ISBN 978-1-58603-877-9

18. Waterhout, Bas, **The institutionalisation of European spatial planning**
2008/226 pages/ISBN 978-1-58603-882-3

19. Koopman, Marnix, Henk-Jan van Mossel and Ad Straub, **Performance measurement in the Dutch social housing sector**
2008/140 pages/ISBN 978-58603-962-2

20. Pal, Anirban, **Planning from the bottom up. Democratic decentralisation in action**
2008/126 pages/ISBN 978-58603-910-3

21. Neuteboom, Peter, **On the rationality of borrowers' behaviour. Comparing risk attitudes of homeowners**
2008/112 pages/ISBN 978-58603-918-9

22. Itard, Laure and Frits Meijer, **Towards a sustainable northern European housing stock. Figures, facts and future**
2008/226 pages/ISBN 978-58603-977-6

23. Janssen-Jansen, Leonie, Marjolein Spaans and Menno van der Veen, **New instruments in spatial planning. An international perspective on non-financial compensation**
2008/258 pages/ISBN 978-1-58603-978-3

24. Coolen, Henny, **The meaning of dwelling features. Conceptual and methodological issues**
2008/164 pages/ISBN 978-58603-955-4

25. Van Rij, Evelien, **Improving institutions for green landscapes in metropolitan areas**
2008/226 pages/ISBN 978-58603-944-8

26. Van der Veen, Menno, **Contracting for better places. A relational analysis of development agreements in urban development projects**
2009/394 pages/ISBN 978-1-60150-005-6

27. Meesters, Janine, **The meaning of activities in the dwelling and residential environment. A structural approach in people-environment relations**
2009/284 pages/ISBN 978-1-60750-012-4

Copies can be ordered at www.dupress.nl.

Delft Centre for Sustainable Urban Areas carries out research in the field of the built environment and is one of the multidisciplinary research centres at TU Delft. The Delft Research Centres bundle TU Delft's excellent research and provide integrated solutions for today's and tomorrow's problems in society. OTB Research Institute for Housing, Urban and Mobility Studies and the Faculties of Architecture, Technology, Policy and Management and Civil Engineering and Geosciences participate in this Delft Research Centre.

The dwelling is a central setting in people's everyday life. People use their dwelling and residential environment for a large variety of activities and purposes. This study systematically relates activities, settings and meanings to improve the insight into people-environment relations. This is called a meaning structure approach. Over 600 people, living in either a city centre, suburban or rural type of residential environment were asked about their everyday activities and the meanings thereof. The results show that meanings are important for the way in which people use their dwelling and residential environment.
The meaning structure approach allows for a high level of aggregation identifying general meanings of the dwelling, such as a place to be together with family and friends. It also allows for a low level of aggregation, for example, using internet at home has for many people become part of everyday life, providing them with easy access to a wide range of information. This illustrates the usefulness of meaning structures as a tool for investigating people-environment relations.

ISBN 978-1-60750-012-4

9 781607 500124

DELFT UNIVERSITY PRESS IS AN IMPRINT OF IOS PRESS