

## DOCUMENT RESUME

ED 453 556

CS 510 562

AUTHOR Van Rompaey, Veerle; Roe, Keith  
TITLE Families' Conception of Space and the Introduction of Information and Communication Technologies in the Home.  
PUB DATE 2001-05-00  
NOTE 34p.; Paper presented at the Annual Meeting of the International Communication Association (51st, Washington, DC, May 24-28, 2001).  
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)  
EDRS PRICE MF01/PC02 Plus Postage.  
DESCRIPTORS \*Family Life; \*Family (Sociological Unit); \*Information Technology; Internet; Interviews; Mass Media Role; \*Mass Media Use; Media Research; \*Space; \*Telecommunications  
IDENTIFIERS \*Family Communication

## ABSTRACT

In this study, an integrated quantitative and qualitative research design was employed to study some of the ways in which the diffusion of new information and communication technologies (ICTs) is related to the disposition of physical and symbolic space within families. To begin with the concepts of physical and symbolic space are elaborated and an increasing compartmentalization of family life is postulated. The results are based on an integrated quantitative and qualitative research design. From over 900 telephone interviews a typology of family types based on possession of media appliances was constructed, divided into "traditional" (low media density), "intermediate" (average media density), and "mediated" (high media density) families. This typology was then used as a basis for selecting 38 families for in-depth-interviews. Out of these, ten families were chosen as case-studies to participate in a Family Interaction Game (FIG). The results of the FIG indicate (1) that it is not only media appliances that induce compartmentalization, but also the conceptions and organization of space that families employ; and (2) that besides the television set, the computer appears to be an important factor in shaping family space and should be studied accordingly. Furthermore, the interviews indicate that privacy is not always attainable in the family context--and especially not for teenagers. For them two options are available: they can either participate in lots of leisure activities outside the home or they can use the Internet to create their own private space. Contains 40 references, and 6 tables and 5 figures of data. (Author/RS)

Running head: FAMILIES, ICT, AND SPACE

**Families' conception of space and the introduction of Information and Communication**

**Technologies in the home.**

Veerle Van Rompaey & Keith Roe

Katholieke Universiteit Leuven

Belgium

Correspondence Address:

Veerle Van Rompaey

Prof. Dr. Keith Roe

Department of Communication

Van Evenstraat 2A

3000 Leuven

Belgium

Tel: +32-16-32.32.02

Secr.: +32-16-32.32.20

Fax: +32-16-32.33.12

e-mail: [veerle.vanrompaey@soc.kuleuven.ac.be](mailto:veerle.vanrompaey@soc.kuleuven.ac.be)

**BEST COPY AVAILABLE**

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND  
DISSEMINATE THIS MATERIAL HAS  
BEEN GRANTED BY

*V. Van Rompaey*

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)

## Abstract

In this study an integrated quantitative and qualitative research design was employed to study some of the ways in which the diffusion of new information and communication technologies (ICTs) is related to the disposition of physical and symbolic space within families. To begin with the concepts of physical and symbolic space are elaborated and an increasing compartmentalization of family life is postulated. The results are based on an integrated quantitative and qualitative research design. From over 900 telephone interviews a typology of family types based on possession of media appliances was constructed, divided into 'traditional' (low media density), 'intermediate' (average media density), and 'mediated' (high media density) families. This typology was then used as a basis for selecting 38 families for in-depth-interviews. Out of these, ten families were chosen as case-studies to participate in a Family Interaction Game (FIG). The results of the FIG indicate first, that it is not only media appliances that induce compartmentalization, but also the conceptions and organization of space that families employ and, second, that besides the television set, the computer appears to be an important factor in shaping family space and should be studied accordingly. Furthermore, the interviews indicate that privacy is not always attainable in the family context - and especially not for teenagers. For them two options are available: they can either participate in lots of leisure activities outside the home or they can use the internet to create their own private space.

It has always been assumed that the media affect family life. There have been many studies into the impact on family life of television (Kubey, 1986 ; Lull, 1980, 1988 ; Morley, 1986; Krcmar, 1996), the VCR (Levy, 1980a, 1980b ; Morgan, Shanahan, & Harris, 1990), and computers (Brimm & Watkins, 1985 ; Caron, Giroux, & Douzou, 1985 ; Dutton, Kovaric, & Steinfield, 1985 ; Haddon, 1992). Currently, however, families are being confronted with radical changes in the structure of the media environment (such as digitalization, the Internet, and multimedia technology), changes which are posing new challenges to family life. Furthermore, families are more and more living in houses that are equipped with many different media appliances (Livingstone, 1998; Morley & Silverstone, 1990). These changes raise questions about spatial organization.

The use of space has frequently been investigated by the Family Studies discipline which makes a distinction between physical and symbolic space (Morgan, 1996). Physical space is a Family Studies concept that sociologists have named 'setting' (Goffman, 1959) and 'locale' (Giddens, 1979). The latter concept has also been used by Rasmussen (1997). Furthermore, Wentling (1990) divided houses into either traditional or transitional homes. Traditional homes are privacy orientated, emphasizing separated and one-purpose rooms that are completely closed off from other rooms in the house. Transitional homes are less private, more open and community-oriented. Every home may contain both components.

In this context we propose to adduce the concept of compartmentalization. According to Gumpert and Drucker (1998 : 431):

« The personalization of media technologies coincides with a design emphasis on separate places for separate functions and inhabitants that *partition* adults from children and men from women. The architectural style of the home and the positioning of media appliances in the home can therefore create different *compartments*. »

Symbolic space, on the other hand, is the most studied concept and refers to the meaning that families ascribe to the spaces in their home or in their environment; spaces which are guarded by boundary management between the public and the private. In this regard, Bernstein (1971) divided families into positional-oriented and person-oriented families according to their spatial closedness or openness. In positional-oriented families the meaning ascribed to a certain space is fixed. In person-oriented families there may be more discussion about a space's ascribed meaning. Moreover, according to Bernstein, person-oriented families are better able to cope with the blurring of boundaries between the public and the private. They accept that each space can have different meanings which can change constantly. Here, too, Goffman's (1959) concepts of 'frontstage' and 'backstage' behaviour can be seen as aspects of symbolic space. 'Frontstage' behaviour is public and observable and defines the situation for anyone else present at the time. 'Backstage' behaviour is not always visible to the other persons present. Rasmussen (1997) indicates that when using 'older' media like books, newspapers, magazines, television and radio in the presence of another family member, frontstage and backstage behaviour mostly coincide since what we do is apparent to the other person present. What researchers are now beginning to find is that new ICTs, like the Internet, are blurring the boundaries between private and public space (cf. Meyrowitz, 1985 ; Frissen, 1992). In this situation, while formerly frontstage and backstage behaviour coincided, with the emergence of these new technologies, backstage and frontstage behaviour may become disconnected (Rasmussen, 1997 ; Gumpert & Drucker, 1998). For example, through telephone calls, Internet chat lines, and E-mail we can communicate beyond place, thereby becoming loosened from our surroundings. Physically we can be in the same room as another family member but mentally we are somewhere else. As Rasmussen indicates, this is typical of a 'virtual context'.

The emergence of a virtual context, combined with an increasing density of media appliances, and especially Information and Communication Technologies, in the home, has led to the emergence of a popular thesis postulating greater privatization and individualization within the home, leading to more and more social isolation both of the family as a whole and of its various members (Gottlieb & Dede, 1984; Vitalari & Venkatesh, 1988; Livingstone, 1998, 1999). This process is reinforced by the domestication of leisure. Increasingly, the home is becoming the major leisure realm (Abercrombie & Warde, 1988; Clarke & Critcher, 1985; Rojek, 1985).

The purpose of this paper is further to investigate families' conception of space in relation to Information and Communication Technologies:

1. Does families' conception of space influence the placing of media appliances?
2. Where are media appliances placed in the home?
3. Which appliances are central and which are peripheral?

### Method

The data reported here are drawn from a major study of the role played by the media in Flemish family life conducted in the Spring of 1999. In a first stage computer assisted telephone interviews (n=965) were conducted with a representative sample of Flemish families (one-person households were excluded). The resulting data were then subjected to a K-means Cluster Analysis (Sharma, 1996 ; SPSS Inc., 1997) for the purpose of constructing a continuum from which a typology of families based on density of ICT in the household could be drawn. The number of different media appliances at home were used to calculate a three cluster solution. For this purpose standardized values were used.

Table 1: ABOUT HERE

Table 2: ABOUT HERE

Three types of families were thus identified:

**type 1** (54%). This consisted of 'traditional families' characterized by low media density (i.e. TV, telephone, and a limited number of audio appliances).

**type 2** (31%). This consisted of 'intermediate families' characterized by average possession of media. They differ from type 1 in having more appliances (extra TV's & audio media) and from type 3 in not having newer ICT such as Internet and e-mail.

**type 3** (15%). This consisted of 'mediated families' with a high density of appliances and the presence of e-mail, Internet, cd-roms etc.

Table 3 : ABOUT HERE

The means of all variables differ across the three clusters. These variables were therefore all important in identifying the three clusters. However, the means of *Internet connection* ( $F=1859,35$ ), *modem* ( $F=727,502$ ) and *e-mail address* ( $F=623,759$ ) differ the most. These variables were therefore more important in identifying the three clusters.

On the basis of this typology 38 families were then selected for a qualitative study involving in-depth interviews : 6 from type 1, 15 from type 2, and 17 from type 3. Of these, 31 (4 in type 1, 13 in type 2 & 14 in type 3) contained children. The interviews were conducted in the home with parents and children together.

Out of these, ten families (5 from type 1, 2 from type 2, and 3 from type 1) were then chosen as case-studies and it is these families that form the subject of this paper. In order to study families' conception of space in relation to Information and Communication Technologies, the Family Interaction Game (FIG) was employed. This method is based on the work of Cromwell and Peterson (1981).

In each of the ten cases, family members are given the assignment to draw their ideal home together. They have to draw the ground-plan of the house and furnish it. They are asked to label each room and to point out which family member may use that particular room. When the ground-plan is finished the family is given the opportunity to buy media appliances to put into their ideal home. For this purpose they are assigned an amount of money (350 000 BEF / approx. 7300 USD) and a price-list containing the price of each media appliance. In this way the family is forced to reach a consensus and make decisions about the house and about the placing of media appliances that they find important enough to buy.

Since this is a task that confronts the family with a hypothetical problem, it gives the opportunity to check how different media appliances are incorporated in the family home. It also gives us an indication as to which appliances are the most important to have and which are more peripheral. After this task the family members are asked to fill in a short questionnaire in which they can rate their satisfaction with the family solution. Family interactions are recorded and transcribed.

## Results

### Physical space.

In order to get a clearer view of Flemish family homes data from the quantitative survey will first be presented. The following discussion is based on the data from families with children (n=617).

Table 4 : ABOUT HERE

An average Flemish family home consists of eight separate rooms. The modal pattern is one bathroom (90%), one kitchen (76%), one living-room (65%), one storage room (68 %), one dining room (50 %), one parental bedroom (99%) and two children's bedrooms (51%). In more transitional orientated homes there is a trend towards open spaces, so that living-room, dining-room and kitchen can be situated in the same space (12%). In more traditional orientated homes spaces are strictly separated and also have separated functions. Furthermore, our survey results suggest that more and more Flemish family homes are equipped not only with more than one set of 'old' media appliances but also with lots of 'new' ICT. As a result family homes are more and more becoming centres of multimedia activities.

Table 5 : ABOUT HERE

36 % of Flemish families are in possession of a multimedia computer. Almost the same number have a CD-rom (41 %), 21 % have a modem, 13 % of Flemish families have one or more e-mail addresses and 15 % are connected to the internet. When we only look at families with children we even found that 18 % of these families is already connected to the Internet. Half of Flemish families have video-and/or computer games and 43 % of these have a game console such as Playstation or Nintendo. Moreover, not infrequently, the computer related media were found to be situated in the children's bedroom, this being the case for almost half of the computers (ordinary PC and multimedia PC) and 16 % of the modems reported.

Table 6 : ABOUT HERE

In line with previous research (Beentjes, et al., 1999 ; Livingstone, Holden & Bovill, 1999), our data suggest that children's bedrooms, unlike parental bedrooms, are increasingly equipped with all sorts of media appliances. This is very obvious when the results of the FIG are studied. Thus, while parents appear to do themselves short, their children splash their rooms not only with ICT but also with swimming pools, waterbeds and jacuzzi's. As illustrated by this 16 year old boy's bedroom :

Figure 1 : ABOUT HERE

Boy: I've got my dvd-player, my television with remote control with my playstation attached to it. I've got my Mobile Phone and my satellite dish at my window and... a surveillance camera when someone wants to enter my room.

An important question to be asked, in this regard, is whether or not children's bedrooms are becoming secluded multimedia islands where children go to evade family life and as such create a compartmentalization between themselves and their parents. This seems to be the case in more traditional orientated homes where privacy is very much appreciated. As illustrated by this 11 year old boy who feels that the space he has picked to create his bedroom is threatened by his brother :

Boy : That's my bedroom, you moron. Look at this, he (refers to his brother) has drawn on my room !

Mother : Just pick yourself another one...

Boy : (worked up) It's my room !!!

In line with previous research (Wentling, 1990), the results of the FIG indicate that family homes are mostly not just transitional or traditional. In most cases they are a mixture of both. More specifically, we found that most families drew homes that were transitional downstairs and traditional upstairs. This could be because the more community oriented

places such as the living room, kitchen and dining room are to be found on the lower level of the home. Upstairs you will find the children's and parental bedrooms and the bathroom which in all ten cases are places that are separated from one another by walls and doors. As this family discussion and the design of the lower level of their home shows:

Mother: That's the kitchen and that will be the living room, this large corner. (to her son) You can make the door here.

Son (14 years old): That ain't a door, we leave that open. That's a new design. And then we make the dining room here.

Mother: yes, and the sitting area.

Son: So does everybody agree, or should we look at it again?

Mother's partner: Look at what?

Son: Well here (points at the open space)

Mother's partner: It's ok like that. We're just going to leave that open.

Figure 2: ABOUT HERE

Furthermore, compartmentalization seems to be a feature of the traditional homes. Transitional homes, on the other hand, are more open implying fewer strict compartments. When we look at the specific architectural styles that we generated through the FIG we could even say that compartmentalization occurs because family members retreat to the traditional oriented spaces of the home which are to be found upstairs, even though this may lead to greater overall compartmentalization.

Silverstone, Hirsch, and Morley (1992) have already recognized the changing media context within the family home (although they still regarded television as the 'leading object' in the household), but they acknowledge that the presence of other media appliances has certainly changed the context and even the meaning of 'watching television'. The results of our FIG show that in all ten cases the television remains the most important focus of the family home. It is situated in a central space of the living room and is in all cases, except one, accompanied by the video recorder. The Family ground-plans also show that furniture and

especially sofas are often put in a circle towards the television in order to create a cosy sitting area. Very remarkable in this regard was that every family wanted to have a large television set in its living room. Even the one family that did not have television in their real life (because the father was opposed to it) incorporated a large television set into their ideal home which was situated in the centre of the living room with the sofas pointing towards it.

### Figure 3: ABOUT HERE

In some cases families even began designing their home by identifying a space to accommodate the large television set. When designing their living room there are lots of families that draw it around the space where they find that their television set has to be placed. Thus is illustrated by a family who, while they were drawing their living room, wondered where to put the television:

Mother: I want a long chair to be put here (in the living room)...

Daughter (12 years old): Or we could put it like that (points at where she wants to place the sofa). Here, and that's the television set, OK?!

Mother: In the middle of the room?

Daughter: Yes, here you have the sofas (around the TV), and then you can watch it like that.

Mother: So where do you want to put the television set? In the middle of the sofas?

Daughter: Here you have the kitchen, and then you can put your television set over here, so that when you sit here, you can see it...

Mother: No, no, the kitchen is over there!

Daughter: So what is this then?

Mother: That's the dining table. That's this table and it's going to be a rectangular one not a round one.

Son (10 years old): (is a bit puzzled) So this is where we put the TV then, is it?

Mother: Those are the chairs (around the dining table)!

In another family:

Mother: So, when you enter the living room...

Father: You can put your sofa like this, in the middle.

Mother: (adjusts the placing of the sofas)

Father: the three-seater, and the two-person-seater opposite each other.

Son (16-year old): And then we need a very large cupboard for the television set.

Father: A TV, my son?  
 Son (12-year old): And a very big one....

When given the chance to buy media appliances the large television set was seen as an important family purchase, without which 'one just could not go on living', as some families put it. This was also reflected in the fact that in all ten cases it was one of the first and least contested media appliances to be bought from our list. As one father puts it without any further debate:

Father: Yes, a TV, we definitely need to have one.

This is contrary to the small television set which was usually purchased as a second TV and which was, in accordance with their demands, put in children's bedrooms.

Interviewer: Now that the ground-plan is done, you can start buying media appliances.  
 Mother: So, first the basic stuff.  
 Son (18 years old): Television in my room.  
 Mother: Let's do this systematically.

Furthermore, the use of this small TV in childrens' bedrooms differs along developmental lines. Younger children tend to want one in order to play with their game console in their own bedroom while adolescents tend to want one in order to actually watch television. In addition, we found, in our intermediate and mediated families in particular, that the computer has the same importance attached to it as the television set. It is also regarded as an obvious presence in the home:

Son (9 years old): So everybody can choose which media appliance he wants?  
 Mother: No no, that's not how it's done. Listen guys, we've got a certain amount of money and with that we can buy whatever media appliance we want for the house. So you can't say: "I want this and I want that!" because then we're out of money. We should

first look into what is very important for us to have. You first have to purchase those things that you can't live without.

Son (11 years old): So instead of a TV in the bedroom...

Father: we spend it all on computers! (laughs)

Also in line with the findings for the large television set, we found that families accommodated for the computer from the beginning:

Father: I think we should bear in mind..., well I often think about a computer corner. A separate corner. And I even thought...for myself that is... a computer corner, somewhere...

Son (11 year old): in a study?

Father: In the living room or so. A study, but more like a separate corner, perhaps with a man's height division, but that you're still in the same room. Perhaps the front here (points at the living room), but with a very low wall here. And there we put everything: my computer and mother's computer (laughs). And it has to be very pretty, you can see that sometimes in some places where they have these beautiful computer tables.

On the basis of our study then, we can conclude, that it is not only the media appliance that induces compartmentalization but also families' conception and organization of space. Furthermore, next to the television set the computer appears as another media appliance that seems to be of equal importance to the television.

### Symbolic space.

The FIG shows that computer related media have found their way into three types of family spaces: the living room, the study, and the children's bedroom. Where families put this media appliance is related to the meaning that they ascribe to a certain space. With the arrival of the PC in the family home a very pressing question occurs: 'Where to place this new media appliance?' Different options are available all of which have implications for the use of

spaces and the meaning ascribed to them. It makes a substantial difference whether you put a PC in your living-room, in a spare room designed as a study, or in the children's bedroom because this will change not only the meaning that people ascribe to this media appliance, but also the meaning ascribed to the specific space. A PC in the living-room, for example, can create ambiguity about the meaning and function of the space : Is it a space to relax (with the television on) or a space to work ? In line with previous research (Bernstein, 1971) we found that this blurring of boundaries may pose problems for positional-oriented families which like their spaces to have fixed meaning. This is shown by a discussion in a family that even names the spaces after the meaning that they have to them :

Son (9 years old) : There has to be a playroom upstairs !

Father : Something else ?

Son (11 years old) : Yes, a computer room, and a play station room.

In contrast, person-oriented families tend to be untroubled by the blurring of meanings. For them a room may have more than one meaning and the ascribed meaning is open for discussion. The most remarkable illustration of this was the bathroom. Normally, one would define this as a very private space but in the case of the more person-oriented families we found that the bathroom could take on a whole different meaning by the media appliances that are put into it. Most common is to put audio appliances such as radio and cd-players in the bathroom.

Girl (15 years old): Can't I have a stereo system?

Girl (17 years old): No. In the bathroom yes, that's the only place where we listen to the radio.

Boy (18 years old): Yes, so that has to be a digital radio... so that we have radio and CD.

Furthermore, you can also find appliances that you would never expect in such a space and that blur the lines between public and private. For example, in one case, the family members wanted to have a telephone in their bathroom:

Figure 4: ABOUT HERE

In another family the 14 year old daughter wanted to have a television set in the bathroom:

Girl: OK, I want cable, and a small television in the bathroom, for when I'm washing myself.

The only space which seems to be safeguarded from blurring influences is the kitchen which in most cases is only equipped with an audio system. Perhaps this could be so because it is regarded as a women's area. As one mother even put it herself:

Mother: Don't spend all the money! I need something for my kitchen too.

From this perspective it is interesting further to investigate the concept of privacy. Although, in our time, privacy is of growing importance and it appears as if privacy can be obtained by everyone, it seems that in the family context this democratic view might be somewhat exaggerated. As Allan and Crow (1991) have indicated, teenagers are not always able to create their own private spaces, and react by turning to leisure activities outside the home in order to evade their parents. Furthermore, teenagers may use a computer to be more independent of their parents (Murdock, Hartmann & Gray, 1992). We also observed that teenagers often use computer games to create a screen between frontstage and backstage behaviour, thereby creating their own private space:

Interviewer: Do you find it annoying when they (16 year old son and 12 year old son) are playing on the computer?

Mother: Yes.

Father: They close themselves off at that moment, socially speaking. The only contact they have at that moment is with the computer not with us and that really gets on my nerves. Especially when they put on a headset to hear the tunes that accompany the game.

Kraut, et al (1998) have also indicated that the Internet might be used by teenagers to withdraw from social contact as a means of obtaining greater privacy within the family. We also found that the Internet is often used for privacy creation in our mediated families. In addition, we observed that teenagers in our mediated families liked e-mail and chatting, indicating that a 'virtual context' is ideal for teenager's privacy creation since the frontstage is totally separated from the backstage and, as such, they can create a space of their own which can't be invaded by parents or other family members, even when they are in the same room. This is illustrated by a mother talking about the use that their children make of the sole PC that is connected to the Internet. In this family this connection was situated in the living-room and even though the children had a computer in their own bedroom, without an Internet connection, they still preferred the computer downstairs in the living-room.

Mother (about her children): They don't have any notion of time when they're sitting in front of their computer. If we didn't say anything they would be busy on the Internet from eight o'clock in the evening for hours on end until late at night. ... If we don't draw the line they would keep on doing it. That's why I'm a bit concerned about having an Internet connection in all their bedrooms. We're thinking about that but then it's difficult to supervise in each room whether they are sleeping or still chatting.

We found that chatting and e-mail seem to be very popular with teenage girls. Perhaps this could be because chatting is analogous to another favourite female pastime: telephoning (cf. Rakow, 1988; Anderson, Arceneaux, Carter, & Miller, 1995).

Daughter (13 years old): It's absolutely wonderful. I can never stop with it. I chat with this one boy and then I just can't stop. I say to him 'bye, I'm off' and five minutes later, there I am still chatting !

Mother : Most of the time you are chatting with ten people at the same time. When I say 'It's time to stop', then she has to say goodbye to ten people, so that half-an-hour later she's still busy saying goodbye.

Interviewer : Do you always chat to the same people ?

Daughter : Yes, especially, well there are a few boys from school, but also my friends.

Mother : She doesn't chat with strangers !

Daughter : I use the phone less.

With regard to the telephone Rasmussen (1997) indicated that conflicts between communication and locale (the backstage) can be solved by placing the telephone in a place where family members can talk without being overheard by other family members. However, according to our data, in most Flemish families, the telephone is placed in the living-room (73 %) which wittingly or unwittingly leads to a decline in privacy for the person that is calling. It will then be very difficult to create a mental wall between back and frontstage. It might be easier to create this division by chat and e-mail.

This process can even be facilitated by having an internet connection in the children's bedroom which was already the case in the oldest son and daughter's bedroom of one family - as is shown by the upstairs of their ideal home:

Figure 5: ABOUT HERE

### Discussion

In this study an integrated quantitative and qualitative research design was employed to study some of the ways in which the diffusion of new information and communication technologies (ICTs) is related to the disposition of physical and symbolic space within families. To begin with the concepts of physical and symbolic space are elaborated and an increasing compartmentalization of family life is postulated. The results are based on an integrated quantitative and qualitative research design. From over 900 telephone interviews a typology

of family types based on possession of media appliances was constructed, divided into 'traditional' (low media density), 'intermediate' (average media density), and 'mediated' (high media density) families. This typology was then used as a basis for selecting 38 families for in-depth-interviews. Out of these, ten families were chosen as case-studies which participated in a Family Interaction Game (FIG).

In line with previous research our data suggest that children's bedrooms, contrary to parental bedrooms, are increasingly equipped with all sorts of media appliances. An important question to be asked is whether or not children's bedrooms are becoming secluded multimedia islands where children go to evade family life thereby creating a compartmentalization between them and their parents. This seems to be the case in more traditional oriented homes where privacy is very much appreciated.

In addition, we found that compartmentalization is stronger in families that live in more traditional oriented homes than with families living in more transitional oriented homes - although most homes seem to be a mixture of both architectural styles. It follows that it is not only media appliances that induce individualization but also the conception and organisation of space within the family. Furthermore, besides the television set the computer appears to be another media appliance that seems to be of equal importance to the television.

We also found that privacy is not always attainable in the family context, especially not for teenagers. For them two options remain: They can either participate in lots of leisure activities outside the home or they can use the Internet (especially for chatting and e-mail) to create their own private space. The first option seems to be popular in our traditional and intermediate families which are not in possession of an Internet connection, the second is popular in our mediated families.

Future research into the impacts of new ICT on family life should bear in mind that families' organization and conception of space is an important factor with regard to the degree

of impact families permit ICT to have on their lives. Second, the computer has become an important factor in shaping family space and should be studied in such a way. Furthermore, it would be interesting to investigate whether teenagers' preference for the virtual context could lead to a retreat from leisure activities outside the home because they seem less important for the creation of a private sphere.

### References

- Abercrombie, N., & Warde, A. (1988). Contemporary British Society. Cambridge: Polity.
- Allan, G., & Crow, G. (1991). Privatization, home-centredness and leisure. Leisure Studies, 10(1), 19-32.
- Anderson, P. B., Arceneaux, E. R., Carter, D., & Miller, A. M. (1995). Changes in the telephone calling patterns of adolescent girls. Adolescence, 24(2), 145-166.
- Beentjes, H. J. W. J., d'Haenens, L., van der Voort, T. H. A., & Koolstra, C. M. (1999). Dutch and Flemish children and adolescents as users of interactive media. Communications, 24(2), 145-166.
- Bernstein, B. (1971). Classes, codes and controls, vol. 1. London: Routledge and Kegan Paul.
- Brimm, D., & Watkins, B. (1985). The adoption and use of microcomputers in homes and elementary schools. In M. Chen, & W. Paisley (Eds.), Children and microcomputers. Research on the newest medium (pp. 129-150). Beverly Hills, CA: Sage.
- Caron, A. H., Giroux, L., & Douzou, S. (1985). The presence of microcomputers in the home: Uses and impacts. Paper presented at the annual meeting of the International Communication Association, Honolulu.
- Clarke, J., & Critcher, C. (1985). The devil makes work: Leisure in capitalist Britain. London: Macmillan.
- Cromwell, R. E., & Peterson, G. W. (1981). Multisystem-multimethod assessment: A framework. In: E. E. Filsinger, & R. A. Lewis (eds.), Assessing Marriage. New Behavioral Approaches. (pp. 38-54). Beverly Hills: Sage Publications.
- Dutton, W.H., Kovaric, P., & Steinfield, C. (1985). Computing in the home: A research paradigm. Computers in the Social Sciences, 1, 5-18.
- Frissen, V. (1992). Trapped in electronic cages? Gender and new information technologies in the public and private domain: an overview of research. Media, Culture and Society, 14(1), 31-49.

- Giddens, A. (1979). Central problems in social theory: action, structure and contradiction in social analysis. London: Macmillan.
- Goffman, E. (1959). The presentation of self in everyday life. New York: Doubleday.
- Gottlieb, D., & Dede, C. (1984). The social role of the personal computer: Implication for familial mental health. Houston, TX: University of Houston-University Park, Center for Public Policy.
- Gumpert, G., & Drucker, S. J. (1998). The mediated home in the global village. Communication Research, 25(4), 422-438.
- Haddon, L. (1992). Explaining ICT consumption: The case of the home computer. In R. Silverstone, & E. Hirsch (Eds.), Consuming technologies. Media and information in domestic spheres (pp. 82-96). London: Routledge.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet Paradox: A social technology that reduces social involvement and psychological well-being? American Psychologist, 53(9), 1017-1031.
- Krcmar, M. (1996). Family communication patterns, discourse behaviour and child television viewing. Human Communication Research, 23(2), 251-277.
- Kubey, R. W. (1986). Television use in everyday life: Coping with unstructured time. Journal of Communication, 36(3), 108-123.
- Levy, M. R. (1980a). Home video recorders: A user survey. Journal of Communication, 30(4), 23-27.
- Levy, M. R. (1980b). Program playback preferences in VCR households. Journal of Broadcasting, 24(3), 327-336.
- Livingstone, S. (1998). Mediated childhoods. A comparative approach to young people's changing media environment in Europe. European Journal of Communication, 13(4), 435-456.
- Livingstone, S. (1999). Personal computers in the home - what do they mean for Europe's children? Intermedia, 27(2), 4-6.
- Livingstone, S., Holden, K. J., & Bovill, M. (1999). Children's changing media environment. Overview of a European comparative study. In: C. von Feilitzen, & U. Carlsson (eds.), Children and media. Image, education, participation. (pp. 39-51). Göteborg: The UNESCO International Clearinghouse on Children and Violence on the Screen at Nordicom.
- Lull, J. (1980). Family communication patterns and the social uses of television. Communication Research, 7(3), 319-334.
- Lull, J. (1988). World families watch television. Newbury Park, CA: Sage.
- Meyrowitz, J. (1985). No sense of place: The impact of electronic media on social behavior. New York: Oxford University Press.

- Morgan, D. H. J. (1996). Family connections. An introduction to Family Studies. Cambridge: Polity Press.
- Morgan, M., Shanahan, J., & Harris, C. (1990). VCRs and the effects television: New diversity or more of the same? In J. Dobrow (Ed.), Social and cultural aspects of VCR use (pp. 107-124). Hillsdale, NJ: Lawrence Erlbaum.
- Morley, D. (1986). Family television. London: Comedia.
- Morley, D., & Silverstone, R. (1990). Domestic communication - technologies and meanings. Media, Culture and Society, 12(1), 31-55.
- Murdock, G., Hartmann, P., & Gray, P. (1992). Contextualizing home computing. Resources and practices. In R. Silverstone, & E. Hirsch (eds.), Consuming technologies: Media and information in domestic spaces. (pp. 146-160). London: Routledge.
- Rakow, L. F. (1988). Women and the telephone: The gendering of a communications technology. In: C. Kramarae (ed.), Technology and women's voices: Keeping in touch. (pp. 207-229). New York: Routledge and Kegan Paul.
- Rasmussen, T. (1997). Social interaction and the new media. The construction of communicative contexts. Nordicom Review, 181(21), 63-76.
- Rojek, C. (1985). Capitalism and leisure theory. London: Tavistock.
- Sharma, S. (1996). Applied Multivariate Techniques. New York: John Wiley & Sons, Inc.
- Silverstone, R., Hirsch, E. & Morley, D. (1992). 'Information and Communication Technologies and the Moral Economy of the Household.', pp. 15-31 In: Silverstone, R. & Hirsch, E. (eds.) *Consuming Technologies. Media and Information in Domestic Spaces*. London and New York: Routledge.
- SPSS Inc. (1997). SPSS base 7.5 for Windows. User's Guide. Chicago, IL: SPSS Inc.
- Vitalari, N. P., & Venkatesh, A. (1988). The social impact of computing in the home. Irvine: University of California-Irvine, Public Policy Research Organization, Graduate School of Management.
- Wentling, J. W. (1990). Housing by lifestyle: The component method of residential design. New York: McGraw-Hill.

**Table 1 : Final Cluster Centers (means of the standardized variables for each cluster).**

	Cluster		
	1	2	3
Zwidescreen TV	-,01216	-,00967	,04419
Ztape recorder	-,49657	,61078	,49660
Zcd player	-,53745	,63408	,66223
Zcd-rom player	-,52042	,24565	1,31500
ZPC	-,21440	,25361	,28206
Zdecoder for pay TV	-,06364	,09219	,02808
Zdigital video camera	-,13857	,09166	,29254
Zdiscman	-,33595	,35827	,48184
Zwireless telephone	-,21630	,14290	,50651
Zportable PC	-,22522	-,05460	,93171
Ze-mail address	-,31868	-,31260	1,81239
Zfax	-,34689	,03406	1,13760
ZGSM	-,31941	,27021	,52142
ZInternet connection	-,38145	-,37613	2,12129
Zcable	-,19531	,11687	,20220
Zcolor TV	-,32218	,35410	,39467
Zmodem	-,43193	-,16859	1,80844
Zmultimedia PC	-,49518	,17498	1,31965
Zanswering machine	-,27038	,16010	,57572
Zrecord player	-,24622	,31900	,20493
Zradio	-,40912	,56223	,36307
Zsatellite dish	-,09847	,04861	,25514
Zsemaphone	-,16300	,09087	,27666
Zstereo	-,52554	,62200	,59424
Ztelephone	-,29747	,20656	,58637
ZTV with teletext	-,31265	,28862	,39544
ZVCR	-,33753	,26229	,54785
Zvideo camera	-,24124	,21455	,35433
Zradio alarm clock	-,41232	,54210	,28276

**Table 2 : Distances between Final Cluster Centers.**

Cluster	1	2	3
1		3,261	6,121
2	3,261		4,496
3	6,121	4,496	

**Table 3 : One-way analysis of variance.**

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Zwidescreen TV	,180	2	,998	897	,180	,835
Ztape recorder	128,604	2	,699	897	183,977	,000
Zcd player	156,063	2	,674	897	231,558	,000
Zcd-rom player	193,142	2	,577	897	334,550	,000
ZPC	25,542	2	,951	897	26,871	,000
Zdecoder for pay TV	2,217	2	,997	897	2,224	,109
Zdigital video camera	11,714	2	,971	897	12,061	,000
Zdiscman	61,173	2	,884	897	69,233	,000
Zwireless telephone	31,834	2	,923	897	34,481	,000
Zportable PC	72,552	2	,865	897	83,923	,000
Ze-mail address	264,762	2	,424	897	623,759	,000
Zfax	118,516	2	,741	897	159,966	,000
ZGSM	53,557	2	,868	897	61,679	,000
ZInternet connection	365,358	2	,196	897	1859,349	,000
Zcable	13,303	2	,353	897	37,688	,000
Zcolor TV	53,304	2	,898	897	59,366	,000
Zmodem	274,660	2	,378	897	727,502	,000
Zmultimedia computer	183,611	2	,567	897	323,595	,000
Zanswering machine	44,078	2	,866	897	50,876	,000
Zrecord player	31,733	2	,918	897	34,584	,000
Zradio	93,566	2	,801	897	116,856	,000
Zsatellite dish	7,162	2	1,000	897	7,161	,001
Zsemaphone	12,721	2	,862	897	14,761	,000
Zstereo	145,035	2	,689	897	210,548	,000
Ztelephone	51,031	2	,849	897	60,114	,000
ZTV with teletext	45,876	2	,887	897	51,714	,000
ZVCR	57,707	2	,863	897	66,879	,000
Zvideo camera	29,105	2	,927	897	31,400	,000
Zradio alarm clock	87,526	2	,785	897	111,428	,000

**Table 4: Percentages of separate rooms in Flemish homes.**

<b>room</b>	<b>number</b>	0	1	2	3	4	>4
bathroom		0.6	89.8	9.1	0.5	0	0
storage room		12.7	67.7	13.5	4.5	0.8	0.8
kitchen		22.5	76.3	1.1	0	0	0
Dining-room		47.2	50.2	2.6	0	0	0
kitchen + dining-room		89.1	10.7	0.2	0	0	0
Living-room		33.9	64.8	1.0	0.3	0	0
Living-room + dining-room		80.1	19.9	0	0	0	0
kitchen + living-room + dining-room		88.0	12.0	0	0	0	0
study		58.8	38.4	2.3	0.3	0.2	0
bedroom		0	0.6	16.2	53.8	22.0	7.2
parental bedroom		0.3	99.4	0.3	0	0	0
children's bedroom		2.3	28.8	50.6	14.9	4.9	0.5
guestroom		73.1	23.5	2.8	0.3	0.2	0.2

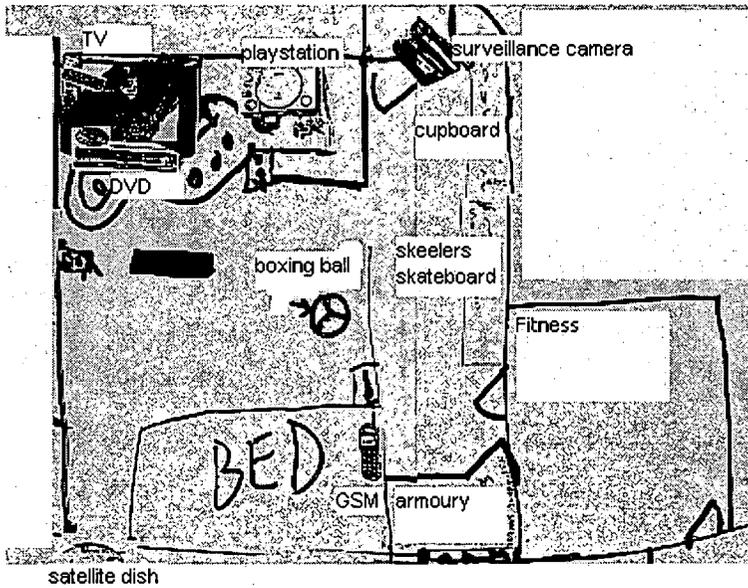
**Table 5: Percentages of Flemish households number of media appliances at home.**

<b>number media appliance</b>	<b>0</b>	<b>1</b>	<b>&gt;1</b>	<b>n</b>
Television	1	59	40	962
VCR	15	72	13	962
Radio	10	34	56	961
CD	13	49	38	962
Regular computer	75	23	2	963
Multimedia computer	64	32	4	963
Portable computer	94	6	0	963
CD-ROM	59	37	4	961
Modem	79	19	2	959
e-mail	87	11	2	950
Internet	85	15	0	960
Game consoles	57	36	7	455
Handheld	51	32	17	447
Telephone	5	66	29	964
GSM	70	25	5	964

**Table 6: Percentages of Flemish families with media appliances in the children's bedroom, living-room, parental bedroom, kitchen and study.**

Media appliance	Children's bedroom	Living-room	Parental bedroom	kitchen	study	n
PC	30	24	3	2	26	198
multimedia PC	19	31	2	2	41	278
modem	16	26	1	1	49	155
telephone	3	73	18	15	13	590
CD	45	82	4	9	7	582
radio	44	62	11	44	7	553
TV	19	97	12	6	3	606
stereo	38	87	3	5	5	570
VCR	9	92	4	3	1	565

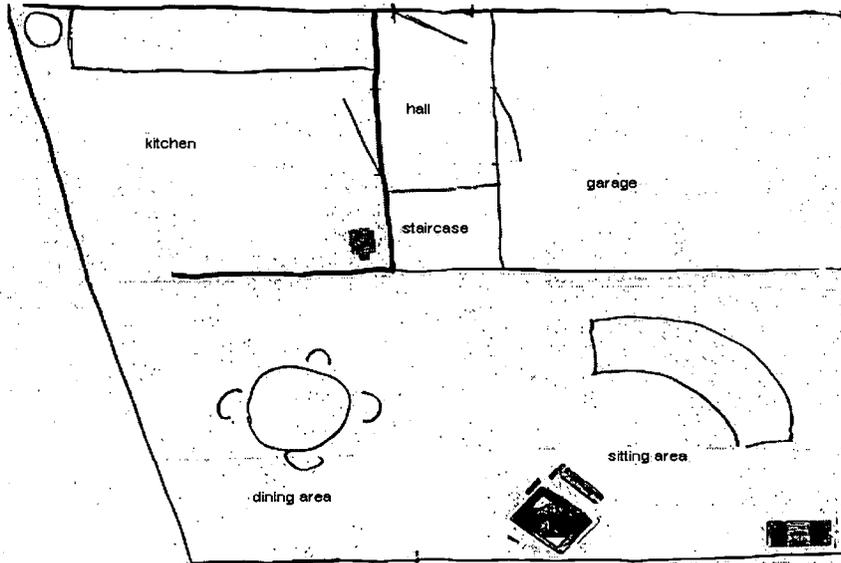
Figure 1: FIG: a 16-year old boy's bedroom design.



BEST COPY AVAILABLE

Figure 2: FIG: One families' design of the downstairs and upstairs of their ideal home.

Downstairs



Upstairs

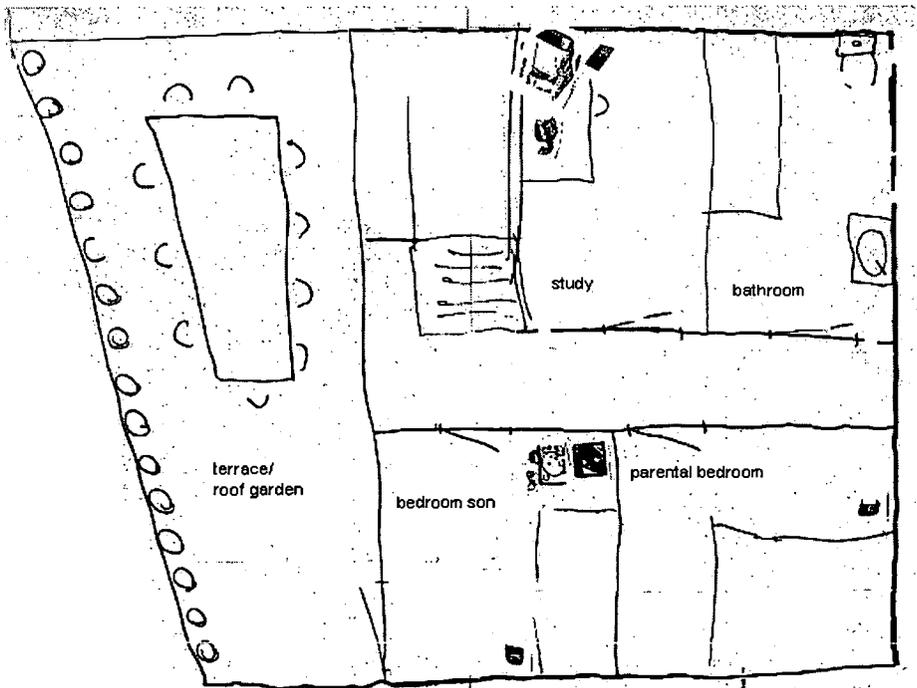
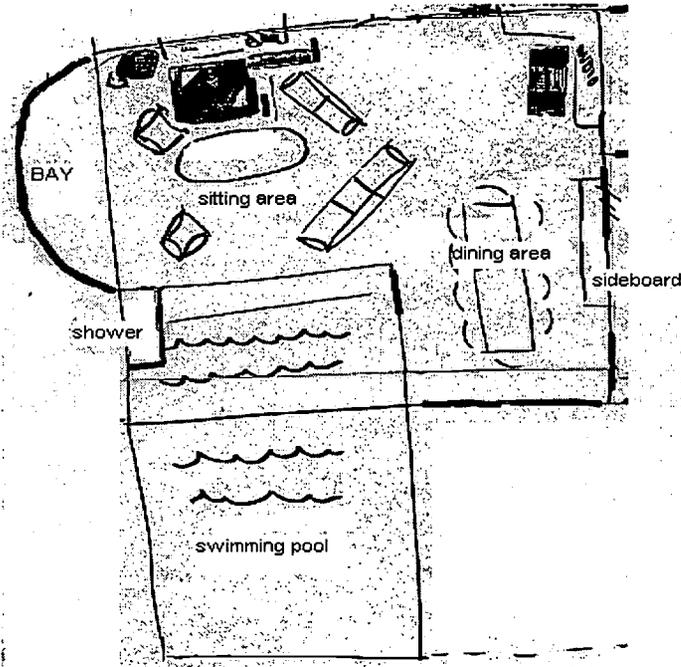
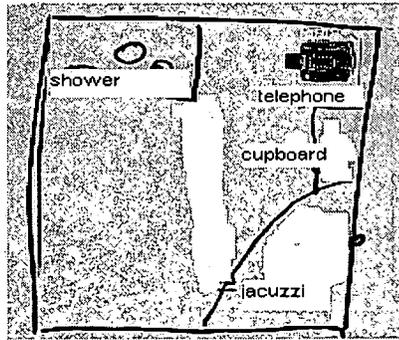


Figure 3: FIG: One families' design of the living room of their ideal home.



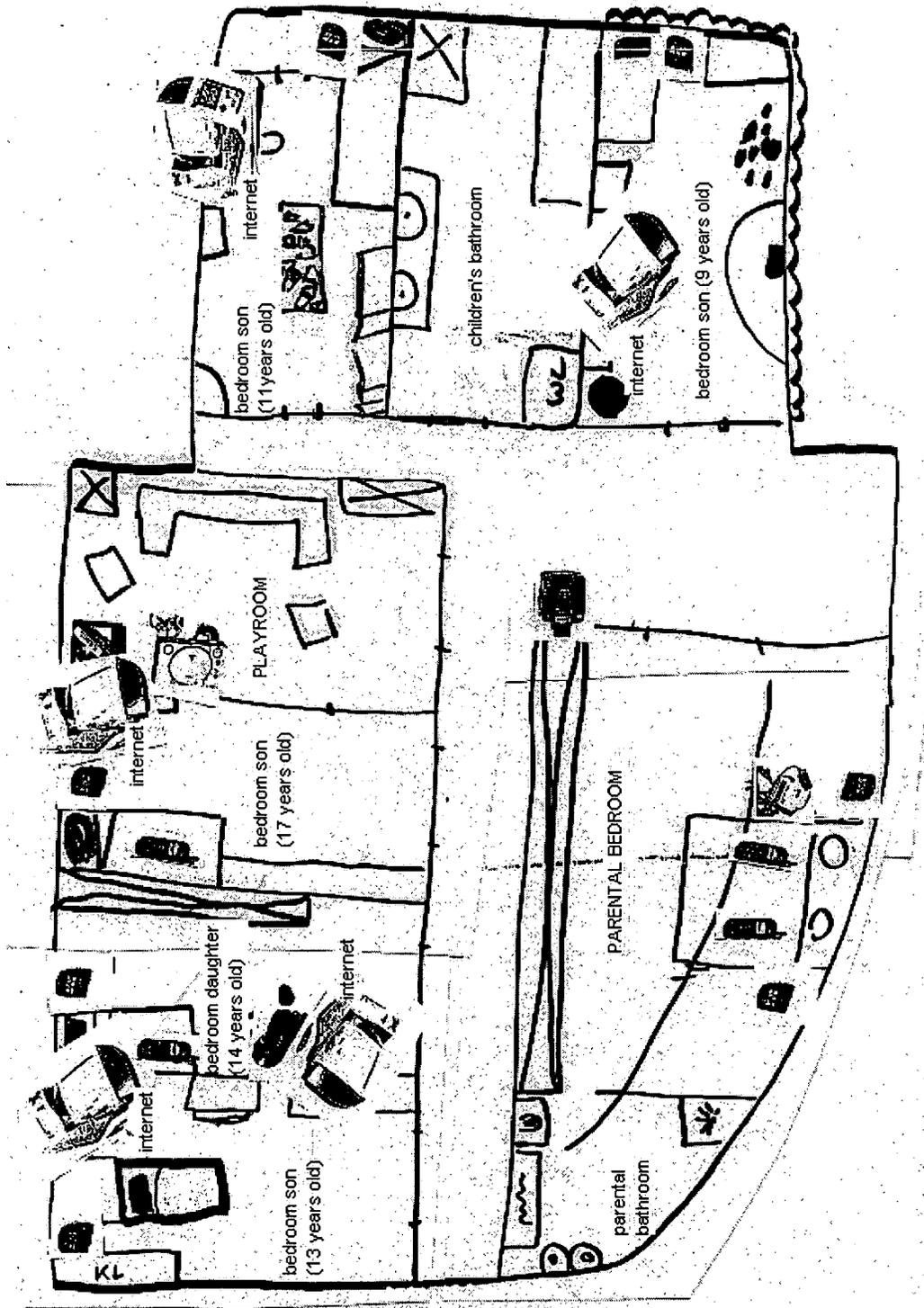
BEST COPY AVAILABLE

Figure 4: FIG: One families' design of the bathroom of their ideal home.



BEST COPY AVAILABLE

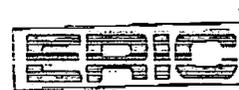
Figure 5: FIG: One families' design of the upstairs of their ideal home.



BEST COPY AVAILABLE



**U.S. Department of Education**  
**Office of Educational Research and Improvement**  
**(OERI)**  
**National Library of Education (NLE)**  
**Educational Resources Information Center (ERIC)**



**Reproduction Release**  
 (Specific Document)

CS 510 562

**I. DOCUMENT IDENTIFICATION:**

Title: Families' Conception of Space and the Introduction of Information and Communication Technologies in the Home.	
Author(s): Veerle Van Rompaey & Keith Koe	
Corporate Source: paper presented at the ICA conference, Washington DC	Publication Date: May 24-28 2001

**II. REPRODUCTION RELEASE:**

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, Resources in Education (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign in the indicated space following.

The sample sticker shown below will be affixed to all Level 1 documents	The sample sticker shown below will be affixed to all Level 2A documents	The sample sticker shown below will be affixed to all Level 2B documents
PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY  TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY HAS BEEN GRANTED BY  TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY  TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
Level 1	Level 2A	Level 2B
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g. electronic) and paper copy.	Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only	Check here for Level 2B release, permitting reproduction and dissemination in microfiche only
Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.		

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche, or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries

Signature: 	Printed Name/Position/Title: Verle Van Rompaey	
Organization/Address: Katholieke Universiteit Leuven, Departement Communicatiewetenschap E. Van Evenstraat 2A 3000 Leuven, Belgium	Telephone: +32 16 32 32 02	Fax: +32 16 32 33 12
	E-mail Address: verle.vanrompaey@soc.kuleuven.ac.be	Date: July 04, 2001

### III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

### IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

### V. WHERE TO SEND THIS FORM:

Send this form to: ERIC Clearinghouse on Reading, English, and Communication (ERIC/REC).

ERIC/REC Clearinghouse

2805 E 10th St Suite 140

Bloomington, IN 47408-2698

Telephone: 812-855-8847