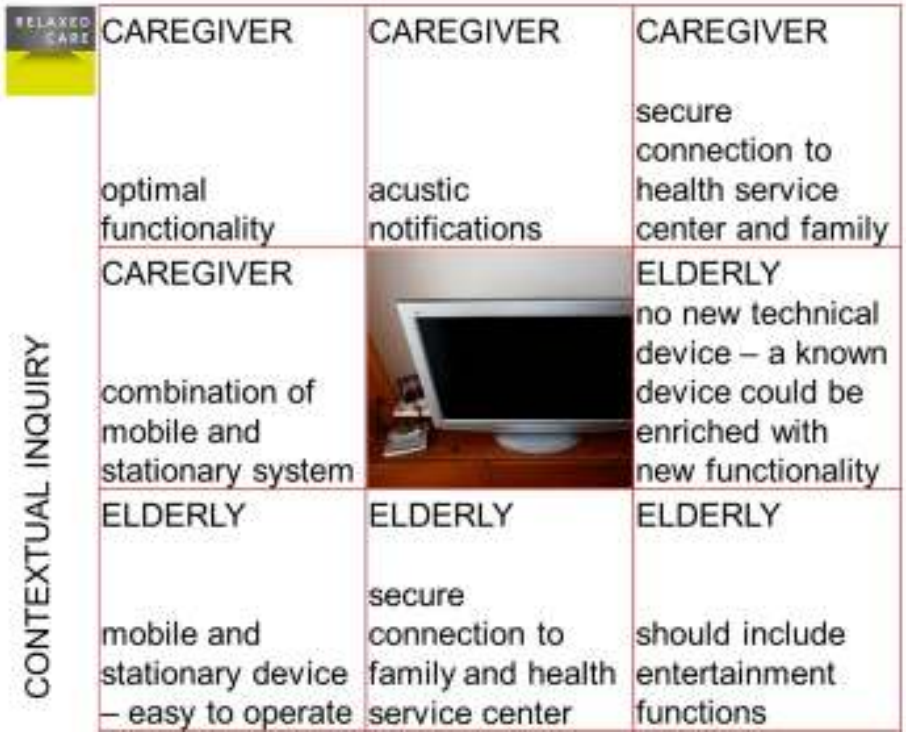

Figure 66: Contextual Inquiry – overview results

5.5 Summary of the Chapter

Chapter 5 provides an overview of the data analysis procedure of the qualitative research methods applied in WP 2 during the first end-user research engineering phase. The analysis procedure started with the application of methods Word Clouds and Affinity Diagramming. The preparation of the material was followed by the evaluation of all results originating from the methods applied. For this a phenomenological approach was chosen by segmenting sentences into categories in order to create meaning units concerning phenomena and significant statements for each user group (caregiver and elderly).

6 Discussion of results and conclusions

This chapter shows a list of product criteria for the RelaxedCare system. Based on the analysis of the methods conclusions concerning positive and negative product criteria could be drawn. With regards to the findings of the study a combination of stationary (at home) and mobile (in use while outdoors) components for the Relaxed Care system is mentioned.

Positive product criteria:

- The system should be aesthetically attractive and appealing,
- should include positive user experience elements (raise curiosity, offer positive user experience through a good and understandable logical structure of the system in terms of good functionality and operability),
- should be in general easy to clean (good material quality and design quality) and should be easy in terms of maintenance,
- with regards to the personalization of the RelaxedCare system components the design in general should address positive personal memories and create positive new ones with either the caregiver or the elderly person,
- should feature waterproofness for elements of the system which are designed as wearable products, and
- should offer time and location independence while using it.

Negative product criteria:

- The system should avoid to require any kind of memory performance,
- as well as it should avoid to create a negative reception of the system components due to bad smell (e.g. like an intensive smell of plastic), and
- erase situations where an information transfer is not possible.

The next passage is dedicated to present a collection of ideas, key words, design approaches and conclusions for the development of the RelaxedCare system based on the findings of the study. For the group of the caregiver the system is expected to fit into everyday life routine like a kind of a guardian angel. Most of all they highlight the fact that the ethics of the system, which was described as offering not forcing the use of objects of technology as a possible support in the lives of the elderly, has to be guaranteed. They emphasize the aspect of care sharing in all the discussions that took place. Caregiver don't want to fall to bits under the burden of caring. They want to have some time off to be themselves as well as they realize that they need this time to keep themselves physically and mentally healthy. The idea of receiving a possibility of keeping up an emotional bond between caregiver and elderly is highly appreciated. For the group of the elderly their independence and autonomy is very important. They don't want to get the feeling that they finally end up being a burden to their sons and daughters or friends. During the discussions with participants of the group of the elderly the fact that the usage of items of technology could offer them a feeling of safety and protection was revealed. They recount that staying fit and healthy feels like a kind of obligation to their beloved ones in order not to become a burden. The idea that through the RelaxedCare system the keeping up of an emotional bond without the pressure that every call means trouble would be possible as well as the possibility to get directly in contact with their caregivers in case of emergency was well received. Another interesting finding of the discussions with the group of the elderly was that the *big brother* phenomenon in terms of being monitored throughout the day is no real issue any longer. The elderly mention that they support the idea of technology assisting them as long as such a system includes a kind of social contact as well. Both user groups imagined the mobile phone to be an important part of the Relaxed Care

system. During focus group discussion ideas like chip implants with a GPS tracking system already used in the US, a technical system which works in combination with a fitness training item in the homes of the elderly which tracks usage as well as health data, an item of technology which enables communication as well as emergency calls and the monitoring of acts of everyday life routines like opening the blinds in front of the windows as status information that everything is normal, were discussed.

7 Interpretation of results

During a 4-days workshop at the NDU form the 1st to the 4th of October 2013 with seven students of the master programme for Innovation and Design Strategies the interpretation of the results of the research study took place. The aim of this workshop was to translate the findings of the study to possible RelaxedCare system concepts. The key question this workshop started with was: Connecting People – Which kind of products (analogue) and/or interactions (virtual) are able to create a feeling of connectedness between people who are not living in the same place? The workshop days followed the process steps of the "user-inspired innovation process" *decode*, *assemble*, *experiment* and *merge*. The methods used during the workshop were: 3-12-3 brainstorming method, heart-hand-mind idea evaluation method, keyword clustering, AEIOU method, ad-hoc personas, scenarios, design concept development methods, physical modelling and use case development. Due to the fact that this workshop took place after the data analysis process of the project and the workshop was designed as a part of the students' practical seminar several methods presented in this chapter were used only for the training of the application of design research methods.

In the beginning of the workshop all the results generated through the methods applied in the study were presented to the students. Afterwards they were invited to a 3-12-3 brainstorming session where they had to write down as much as possible key words to the question of the workshop mentioned earlier in the paragraph. After the key words brainstorming they split up in two groups and each group had to pick three cards out of the stack of cards created in the brainstorming session. Each group had to create a concept with the three key words relating to the main question of the workshop in twelve minutes. Finally each group had three minutes to present the created concepts to the other group. One group developed a virtual network concept and the other group created a concept of a watch which enabled the getting in contact and sharing an emotional status through music between the caregiver and the elderly. Both concepts were evaluated with the help of the heart-hand-mind method. Heart stands for the emotional component of an idea, hand relates to a haptic user experience the concept enables and mind for the logical structure and confirmability of the concept.

Figure 67: Heart-Hand-Mind Evaluation Method

This was followed by a keyword clustering session. All key words produced during the brainstorming method were used to cluster these words to meaning units. After the clustering phase five meaning units could be identified: communication, emotion, social surroundings, activities and objects.

Figure 68: Keyword Clustering Session - Results

The next method conducted was the AEIOU data sorting method. Students received print outs of the results matrixes discussed in chapter 5 and had to sort the key word and phrases according to A = Activities, E = Environments, I = Interactions, O = Objects, U = Users.

Figure 69: AEIOU Data Sorting Method

The following two figures show the results of the data sorting method.

Figure 70: AEIOU Data Sorting Method – Results Caregiver

Figure 71: AEIOU Data Sorting Method – Results Elderly

After the group of students had filtered the data corresponding to the AEIOU method they started to create Ad-Hoc Personas. Two groups of students developed one user pair, a caregiver persona and an elderly persona. For each persona pair they developed afterwards real life scenarios of the everyday living of these persons.

Figure 72: Personas and scenarios development

The second day of the workshop focused on the process step *assemble* of the user-inspired innovation process. Again two groups of students worked on ideas how to create the feeling of connectedness through analogue and virtual objects/services for the persona pair they developed the day before. They created ideas like a connector which is in between of objects of everyday life like a coffee machine and sends acoustic notifications to the mobile phone of the caregiver when the machine gets powered on. Another idea they created refers to the product criteria 'evoke positive memories'. The idea enhanced a common radio about new functionalities like the possibility to receive and send messages. They developed a system hub for both ideas. This hub connects stationary and mobile elements of the RelaxedCare system according to personal preferences and/or health status. After each ideation session their ideas were evaluated via the heart-hand-mind method. Picking-up the idea of the stationary and mobile system components option, they began to develop various design ideas for the components.

Figure 73: Ideation Process

The third day of the workshop was dedicated to the process step *experiment*. Students worked that day on the creation of physical paper prototypes of the ideas they developed the day before. One group worked on the 'radio' idea and one group continued their work on the 'modular cubes' system.

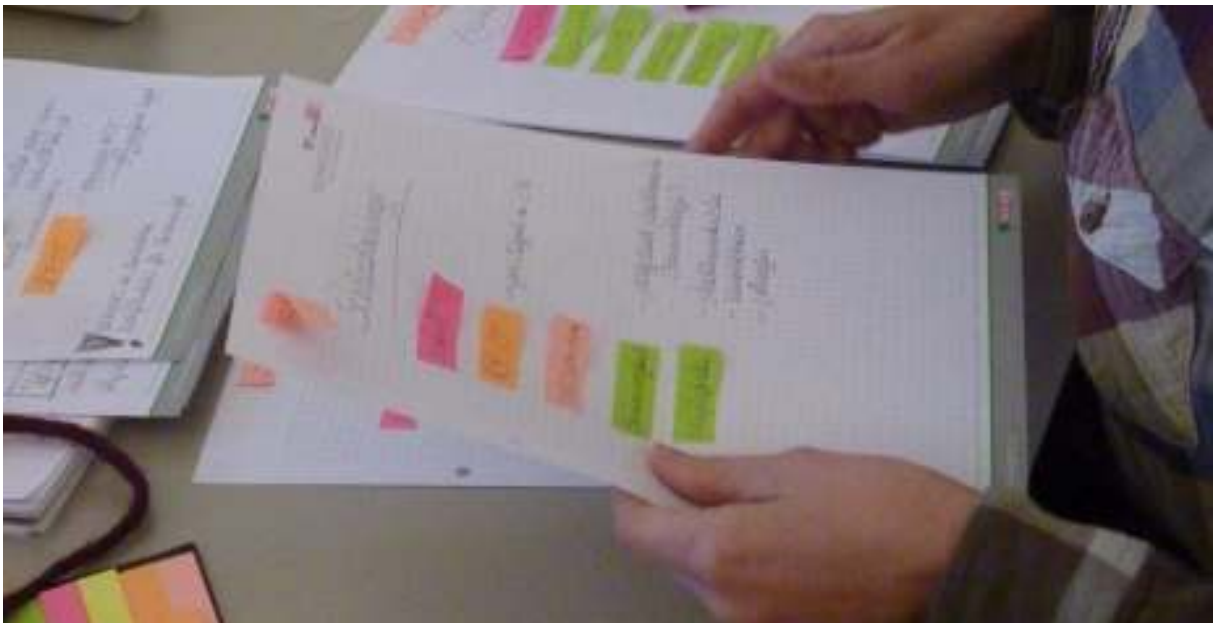

Figure 74: Paper Prototyping

Figure 75: Paper Prototyping

Figure 76: Paper Prototyping

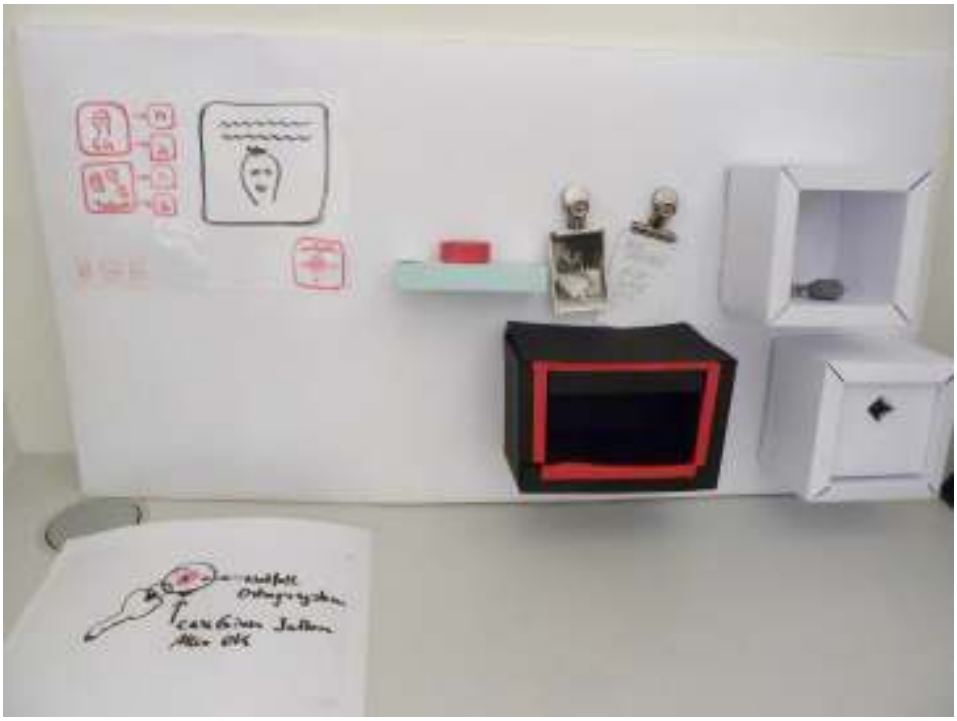

Figure 77: Paper Prototyping

The fourth and last day of the workshop was referring to the user-inspired innovation process used for the process step *merge*. The two groups of students took photos of their paper prototypes in order to create a booklet to present their ideas.

Figure 78: Booklet Development

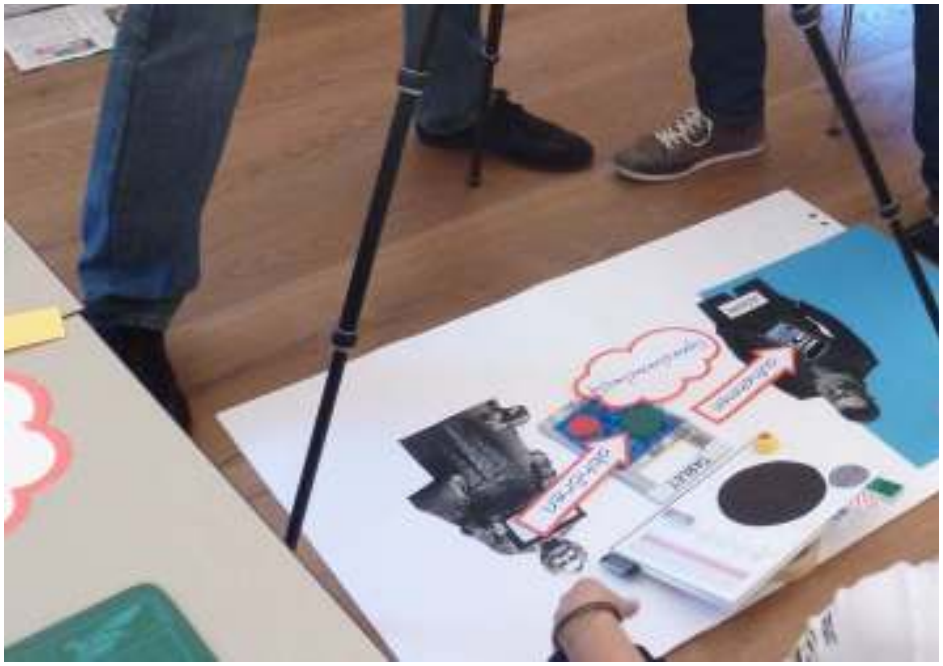

Figure 79: Booklet Development

Figure 80: Booklet Development

Figure 81: Booklet – Concept "careConnect"

The system concept "careConnect" aims at connecting people. "careConnect" is a modular communication system. Core aim of the concept is to enable an easy entry point of using this new approach to establish a new and individually configurable care situation. Like any of us elderly people need from time to time support in their everyday lives or rather the feeling of backing and being not alone. But nevertheless elderly people will benefit from the easy operability and the security the system will provide. It is compatible to diverse objects already owned by the elderly and technology available on the market as well as it includes some new system components. The system includes an adapter to an already owned radio. The adapter can be connected to the radio and enables the sending and receiving of voice mails from the caregiver to the elderly and vice versa. It also includes an emergency button which will send an emergency notification to the caregiver as well as to an ambulance. The second system component depicts a RelaxedCare radio. It includes all functions of the adapter connected to the old radio. The third component describes a key-chain. When the elderly person is leaving her home this key-chain includes also an emergency button. Fourth component of the system is a tablet PC for elderly who are capable of and interested in operating such an item of technology. It includes game functions, displays a reminder for taking the daily medication and has an emergency button included. The connection to social networks and the Internet in general is also part of the user interface.

Figure 82: careConnect - Concept

Figure 83: Booklet – Concept "Care-in-motion"

The system Care-in-motion consists of a board which feeds all other system components with energy. This board is designed to get mounted to a wall in the hallway of a flat. Several cubes belong to this system. There is a cube for powering a key-chain which is also a component of the system when the elderlies are leaving their homes. A cube for powering and defining a fix place in

the flat for the mobile phone is the second component. Diverse storage cubes can be added relating to personal preferences. Like the known object of a pin board both user groups, the caregiver as well as the elderly, can use the Care-in-motion board as a notice board where for instance a shopping list can be positioned. A tablet PC also belongs to this system. It can be magnetically sited on the board to enable a fix storing place in the flat for it. The tablet shows on the start screen pictures of family members and friends. When the elderly person wants to get in contact with one of them she only has to touch one of the pictures. Then she is able to choose either to write a hand-written message to this person or to capture a video message. The messages can be received on the smart phone. Naturally the tablet PC can also be used to connect to different social networks. The different system components of the Care-in-motion concept should enable both user groups to choose items they are interested in. Thereby the care situation should offer options for individualization and get in general alleviated.

Figure 84: Care-in-motion - Concept

The two booklets are presented in the appendix of the document.

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Appendix A Results Data Analysis Word Clouds

Results Focusgroups

CH Caregiver

# #

#

CH Elderly

emergency
srk
call
contact
time
phone
partnering
ONE
button
period
care
service
children
family
neighbors
fainted
reassurance
regularly
happens
person
live
system
health
help
condition
tag
daughter
exchange
daughters
problems
lives
hospital
friends
home
wohnungsschluessel
SUPPORTING
automated
week
communication
attract
record
red
selective
prevention
called
visit
spitex
shower
gets
Holiday
stay
DAILY
accommodation
doctor
sms
intersection
alone
good
nemo
finds
Regular
notruf
kontakt
srk
kinder
zeitraum
spitalperson
besuch
spitalwohnungsschluessel
punktuell
nachbarn
pflegedienst
familie
lebenspartnerin
ohnmaechtig
regelmaessig
ferien
unterstuetzen
beruhigung
alleine
telefoniert
vorbeugung
freunden
gehen
passiert
duschen
wohnung
notfall
aufnehmen
haeufig
gut
toechter
findet
austausch
roten
woche
tag
morgens
spitex
bedingung
handy
betreut
haus
knopf
helfen
tochter
arzt
angerufen
system
sohn
nemo
wohnt
bekommt
kreuz
sms
schwester
tausch
nachbarn
unterstuetzen
lebt
anziehen
zuerst
gerade
geschickt
unterstuetzt
stammtisch
einfach
heute
besser
bosen
schwierigkeiten
schuetzt
aktion
versuchen
personen
automatischen
dienstleistung
kreuzes
besuchsdienst
manchmal
schaetzt
nachbarin
aufmerksam
dorauf
gesundheitliche
ertassen
schwester
gelaufen
telefon
spitze
tut
telefon
sms
system
tag
morgen
gut
aufnehmen
haeufig
notfall
gehen
passiert
wohnung
duschen
besuch
spital
person
schwer

AT Caregivers

AT Elderly
No data available.

Focus groups in AT and CH combined (caregivers & Elderly combined)

telefoniert
beruhigung
notfall
stern
menschen
zweimal
sms
probleme
gehabt
morgens
freund
macht
zeitraum
system
irgendwo
draussen
chemo
naehe
findet
gefahren
jahren
tochter
alleine
gehe
mann
problemroten
druecken
sicher
gemacht
kommunikation
betreuten
schlaganfall
betreuung
gut
personentag
faellt
gleichen
betreut
zeit
darum
pflege
funktioniert
erklaerte
person
krankenhaus
fuegte
schwester
tage
freunden
besuch
schauen
erzaehlt
lebt
gab
mal
hilft
einfach
spitalfrage
woche
notruf
mutter
nie
passiert
heim
spricht
achten
sagen
wohnungsschluessel
rote
klar
lag
telefon
nachbarin
geraet
kenne
her
schluessel
nein
morphium
aufgrund
handy
wohnung
alter
regelmaessig
srk
lebenspartnerin
nemo
aufnehmen
knopf
ohnmaechtig
zwei
krankheit
getan
kontakt
spitex
hilfe
reden
freunde
gar
sicherheit
morgen
ja
nachbarn
auto
punktuell
waehrend
angerufen
jahre
kinder
ferien
rettung
familie
vorbei
jemand
verschlechterte
situation
meinte
ganz
sagte
aeltere
securitas
kreuz
gekommen
gerufen
besser
bekommt
vorbeugung
wolle
zusammen
hause
gehen
darauf
liegt
erwaehnt
wichtig
zustand
helfen
liebsten
sohn
pflegedienst
bedingung
eigentlich
unterwegs
besucht
wohnt
abmachung
meldet

Focus groups in AT and CH combined (caregivers)

letzten
lange
anrufen
alter
erzaehlt
funktioniert
erwaehnt
pflege
betreuten
tag
getan
krankheit
drei
spitex
mutter
nehme
menschen
liebsten
system
krankenfall
mal
sachen
schrieb
betreute
ordnung
sagen
schlaganfall
nehmen
person
spital
gut
stark
gehe
betreuung
rettung
personen
betreut
wohnung
zusammen
mann
problem
auto
irgendwo
knopf
zwei
kreuz
fragte
angerufen
woche
draussen
sicherheit
betreuerin
teilweise
damals
versuchte
gab
besser
aussage
ueberwachen
gekommen
liegt
zustand
einfach
macht
erklaerte
sagte
betroffene
alleine
chemo
gehabt
gar
rein
darauf
technik
sms
gleichen
ok
stern
fuegte
jemand
sicher
ganz
telefon
securitas
aufgrund
morphium
heim
kinder
abmachung
gerufen
besucher
arbeit
verantwortung
hause
nacht
bericht
gemacht
passiert
frage
betreffend
gefahren
wichtig
krebs
chip
nie
jahren
theraphie
freunde
verschlechterte
ja
nein
meinte
situation
hilfe
freundhandy
vorbei
kantonsspital
frau
helfen
wolle
kriegt
bekam
besucht
zeit
schluessel
fragt
rote
braucht
schlecht
computer
handhaben
oft
reden
her
eigentlich
klar
aeltere
gehen
jahre
nachbarin
kontakt
waehrend
schauen
unterwegs
fragen
roten
krankenhaus
meldet
kenne
schicksal

Austrian Questionnaire

Question 1: What do you enjoy the most?

#

#

#

Question 2: What is your favorite subject?

#

#

#

Question 3: Where you prefer to linger at home?

#

#

#

Contextual Interview

AT Interview Caregiver

AT Interview Elderly

#

AT Interview Elderly Question 1:

1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your posession?

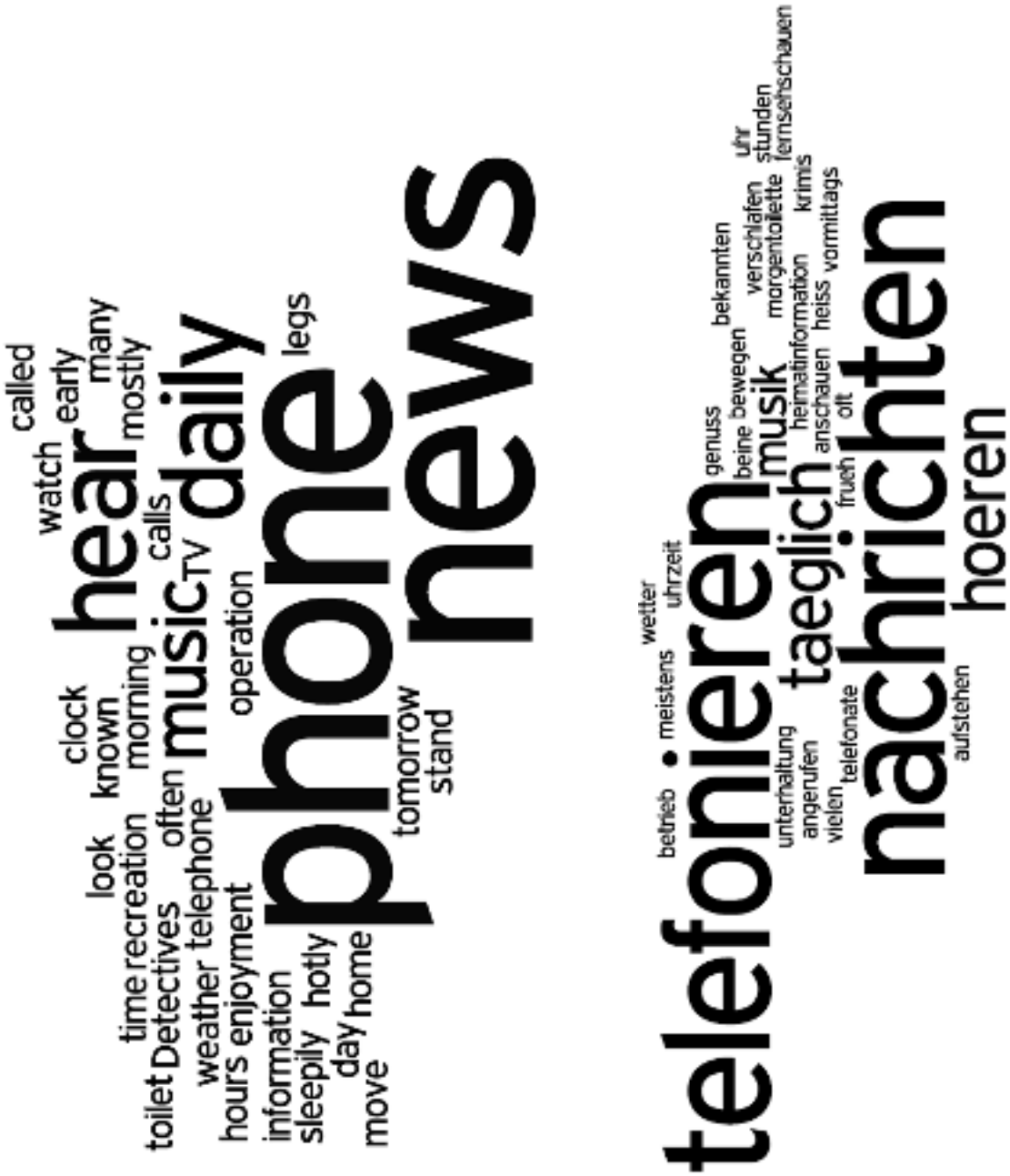
#

AT Interview Elderly Question 2:
Less than 50 words in raw data. No Cloud generated.

#

AT Interview Elderly Question 3

3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?



#

AT Interview Elderly Question 3a

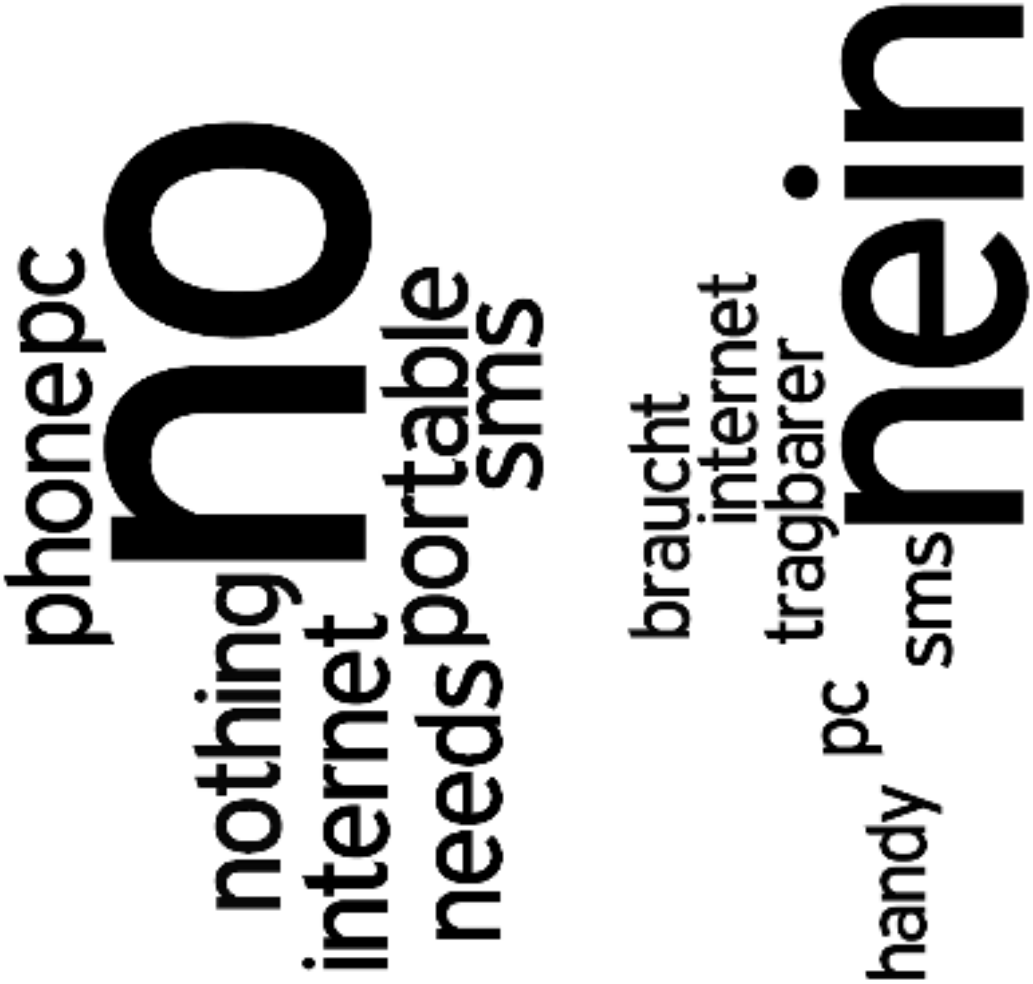
3a	Was genau funktioniert an diesen Geräten gut? Warum funktionieren die erwähnten Aspekte gut?	What works well with these devices? Why do the aspects you mentioned work well?

#

AT Interview Elderly Question 3b – 8:
Less than 50 words in raw data. No Cloud generated.

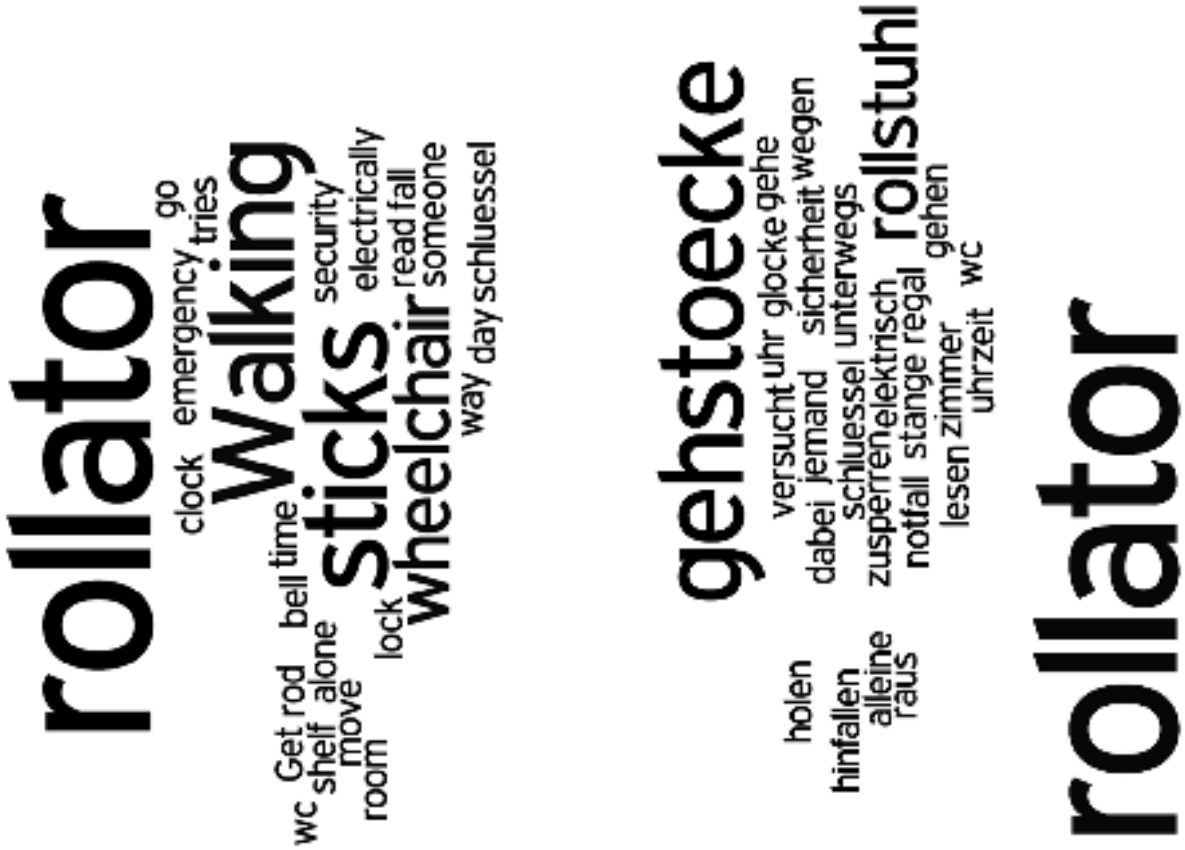
AT Interview Elderly Question 9

9	Wenn Sie nun daran denken, dass Sie Ihr Haus/Ihre Wohnung verlassen und unterwegs sind. Können Sie sich vorstellen, dass Gegenstände, die Sie mit sich führen, bestimmte Arten von Nachrichten/Informationen übermitteln und auch empfangen können? Welche Nachrichten/Informationen könnten das sein? Wie könnten diese übermittelt bzw. empfangen werden? (Akustisch/Visuell/Haptisch?)	Imagine you leave your apartment or house and you are on the road. Can you imagine, that the devices you carry with you, are able to transmit and receive certain messages/information? Which messages/information could it be? How could one send or receive the messages/information? (Acoustically, visually, haptic?)



AT Interview Elderly Question 10

10	Gibt es einen Gegenstand in Ihrem Haushalt, der Ihnen im Alltag Sicherheit gibt? z.B. Gehstöcke, Rollator	In your houshold, is there a device, which provides safety in your daily life? (E.g. cane, rollator?)



AT Interview Elderly Question 11

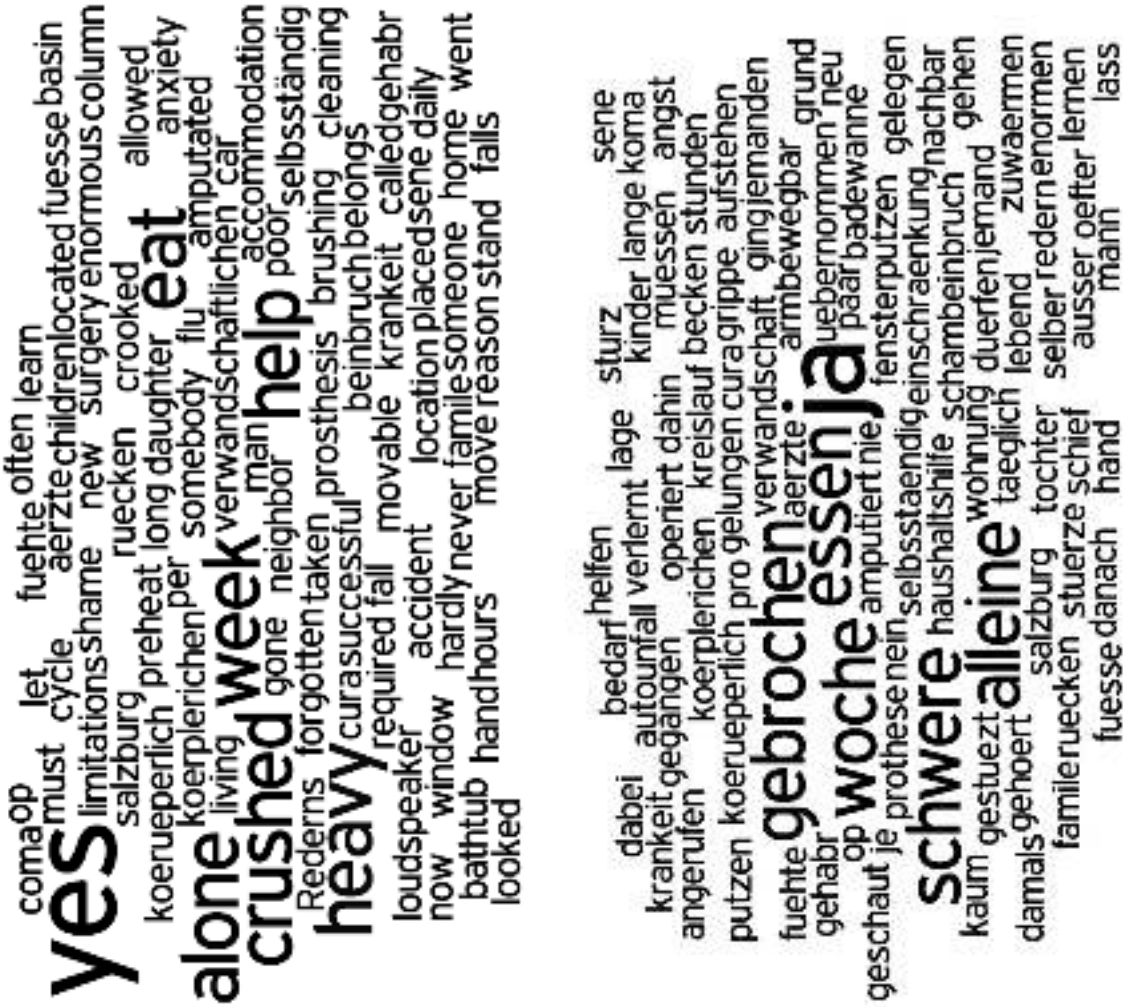
11	In welchen Fällen bzw. Situationen benötigen Sie Hilfe? Möchten Sie in den erwähnten Fällen gerne mit ihren Angehörigen sprechen?	In which cases or situations do you need help? Do you like to talk about these cases with relatives?

AT Interview Elderly Question 12

12	Wie wichtig wäre es für Sie, wenn Ihr(e) BetreuerIn immer Bescheid wüsste über Ihr momentanes Befinden, ohne bei Ihnen persönlich vorbei schauen zu müssen? Was genau würde Ihnen daran gefallen/was weniger? Warum?	How important is it for you, that the caring person is always informed about your health/well-being without dropping by? What would you like about that, and what not? Why?

AT Interview Elderly Question 13

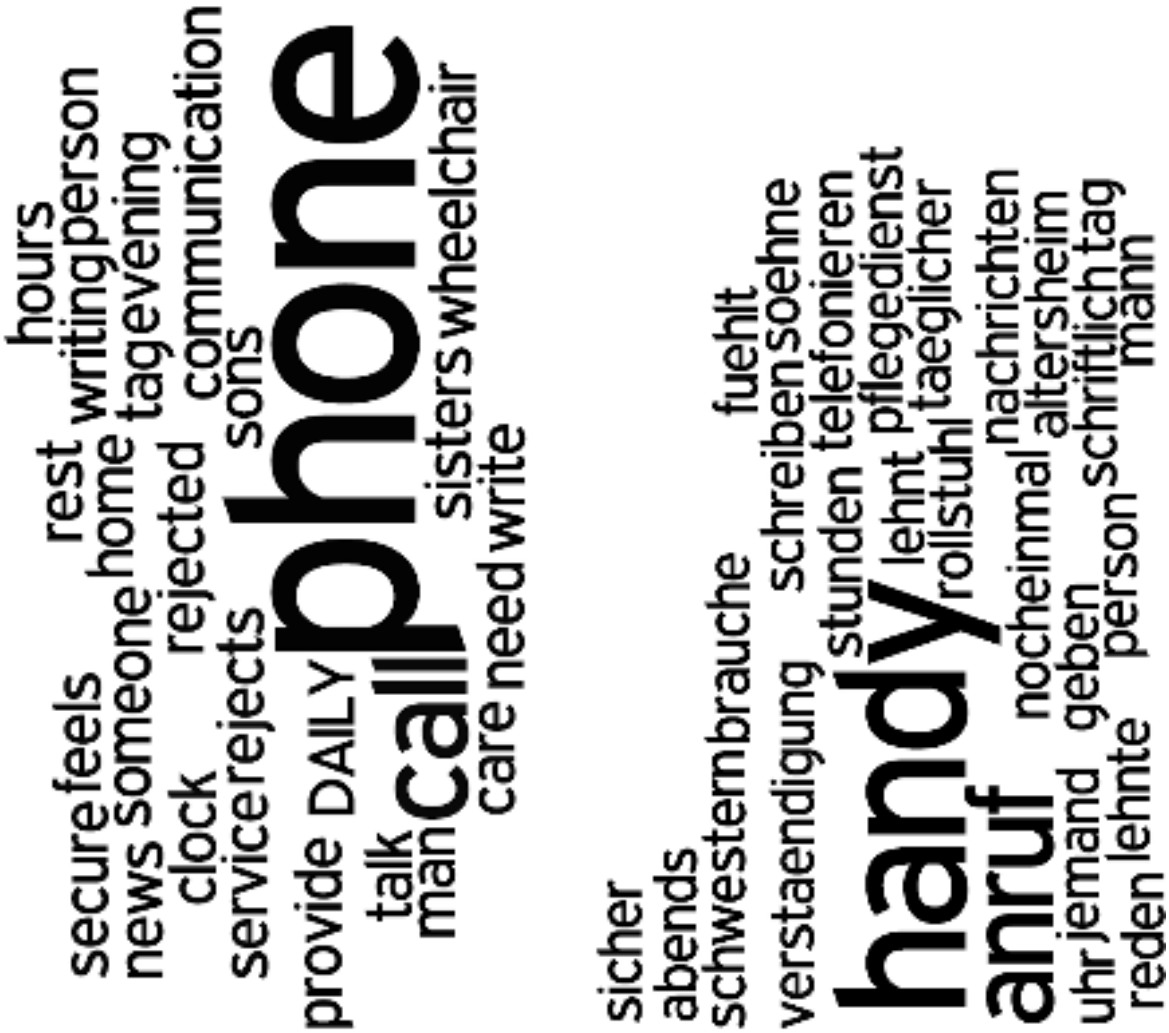
13	Gab es schon Situationen, in denen Sie nicht mehr selbst handeln konnten? Wenn ja, welche? Wer oder Was hat Ihnen geholfen? Was hätte sonst noch helfen können?	Have there been situations in which you were unable to act? If yes: which? Who or what has helped you? What could have helped?



#

AT Interview Elderly Question 14

14	Wodurch fühlen Sie sich sicherer im Alltag? Gibt es Geräte, Zeichen oder eine bestimmte Art der Kommunikation, die Sie mit Ihren Angehörigen für den Notfall vereinbart haben?	What makes you feel safer in daily life? Are there devices, signals or a special way of communication which you use with your relatives in case of emergency?



#

AT Interview Elderly Question 15:
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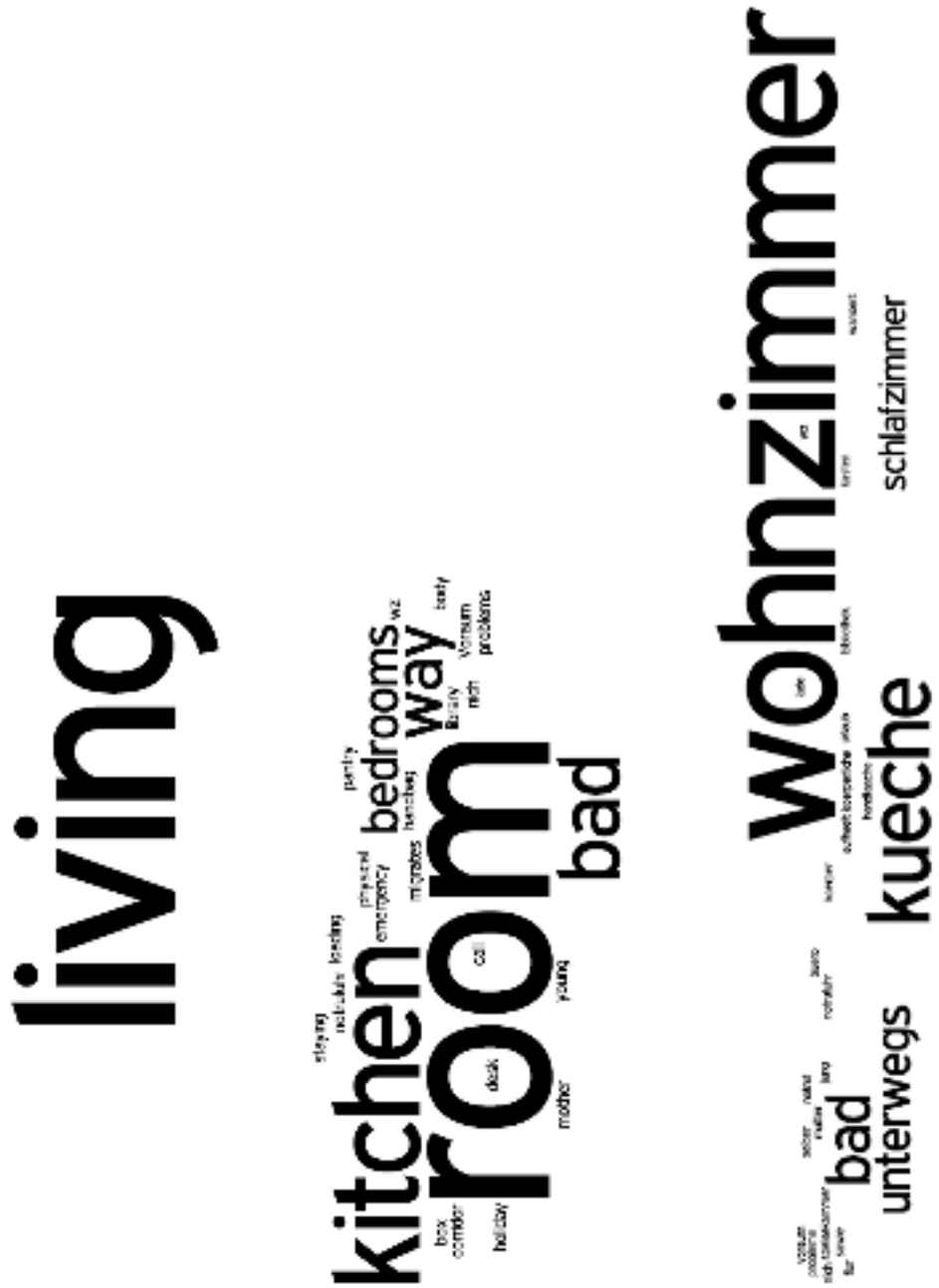
AT Interview Caregiver Question 1

1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your posession?

AT Interview Caregiver Question 2

2	Wo befinden sich die von Ihnen erwähnten Geräte, die in Ihrem Haushalt zu finden sind, wo haben Sie diese jeweils positioniert?	Where are the devices (question 1) located in your apartment, or where did you place them?



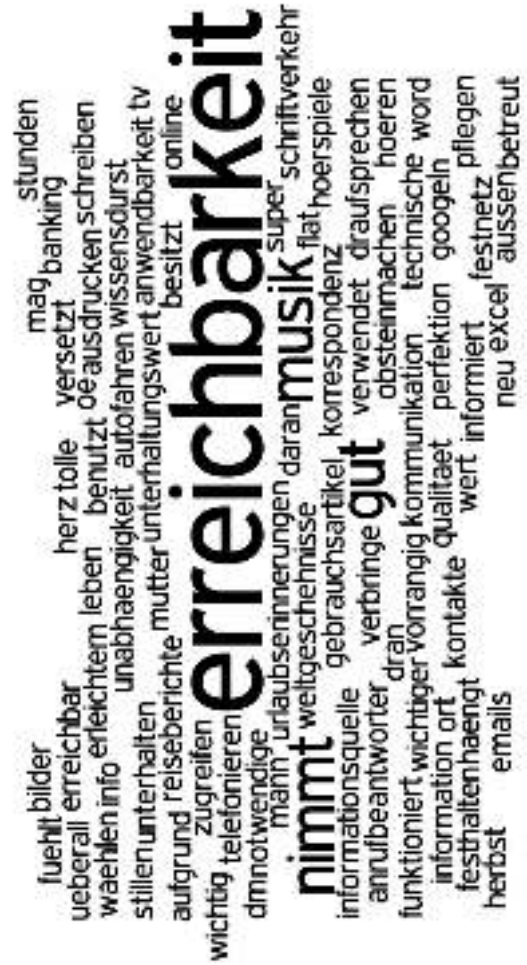
#

AT Interview Caregiver Question 3

3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?

AT Interview Caregiver Question 4

4	Was genau mögen Sie an den von Ihnen verwendeten Geräten besonders gerne? Warum?	What do you like especially with these devices. Why?

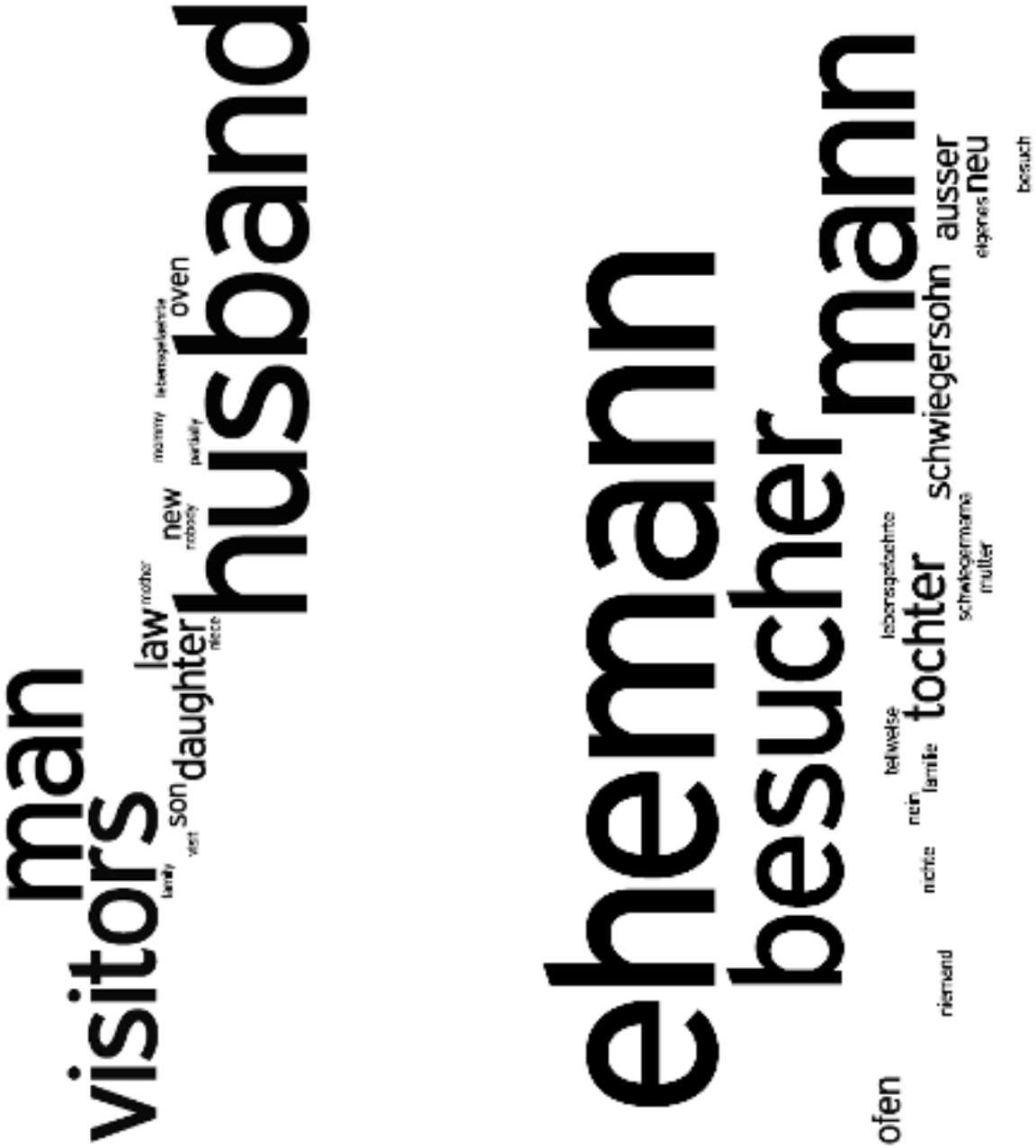


AT Interview Caregiver Question 5

5	Und was genau mögen Sie an den von Ihnen verwendeten Geräten überhaupt nicht? Warum?	Especially what do you not like with these devices. Why?

AT Interview Caregiver Question 6

6	Gibt es jemanden in Ihrem Haushalt/Umfeld, der die von Ihnen angeführten Geräte ebenfalls nutzt?	In your household, is there someone who also uses the devices you mentioned?



AT Interview Caregiver Question 7 (n.a.)
Question:

7	Mit wem kommunizieren Sie mittels der von Ihnen angeführten Geräte?	With whom do you communicate by the devices you mentioned?

Less than 50 words in raw data. No cloud generated.

AT Interview Caregiver Question 8

8	Gibt es zusätzliche Geräte, die Sie sich für Ihren Haushalt bzw. wenn Sie unterwegs sind, wünschen? Wofür würden Sie diese verwenden und warum würden Sie sie dafür verwenden?	Are there further devices you yearn for using in your household or when you are on the road? What would you use them for and why?

AT Interview Caregiver Question 9 – 15:
Less than 50 words in raw data. No cloud generated.

AT Interview Caregiver Question 16

16	Wie erfahren Sie aktuell davon, wenn es der von Ihnen betreuten Person nicht gut geht?	How do you get informed when the person you care for is sick?

AT Interview Caregiver Question 17 – 19:
Less than 50 words in raw data. No cloud generated.

CH Interview Elderly Question 1

1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your possession?

CH Interview Elderly Question 2

2	Wo befinden sich die von Ihnen erwähnten Geräte, die in Ihrem Haushalt zu finden sind, wo haben Sie diese jeweils positioniert?	Where are the devices (question 1) located in your apartment, or where did you place them?

CH Interview Elderly Question 3

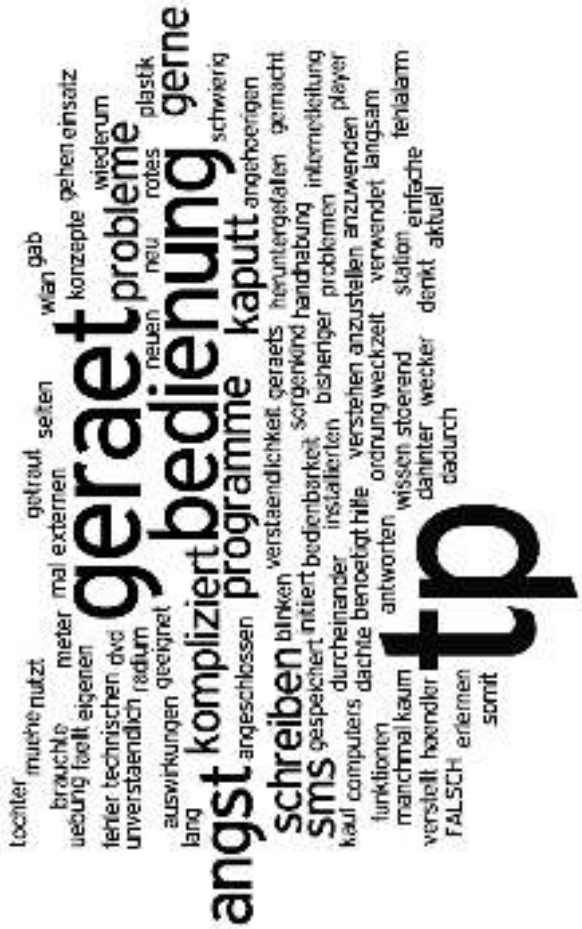
3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?

CH Interview Elderly Question 3a

3a	Was genau funktioniert an diesen Geräten gut? Warum funktionieren die erwähnten Aspekte gut?	What works well with these devices? Why do the aspects you mentioned work well?

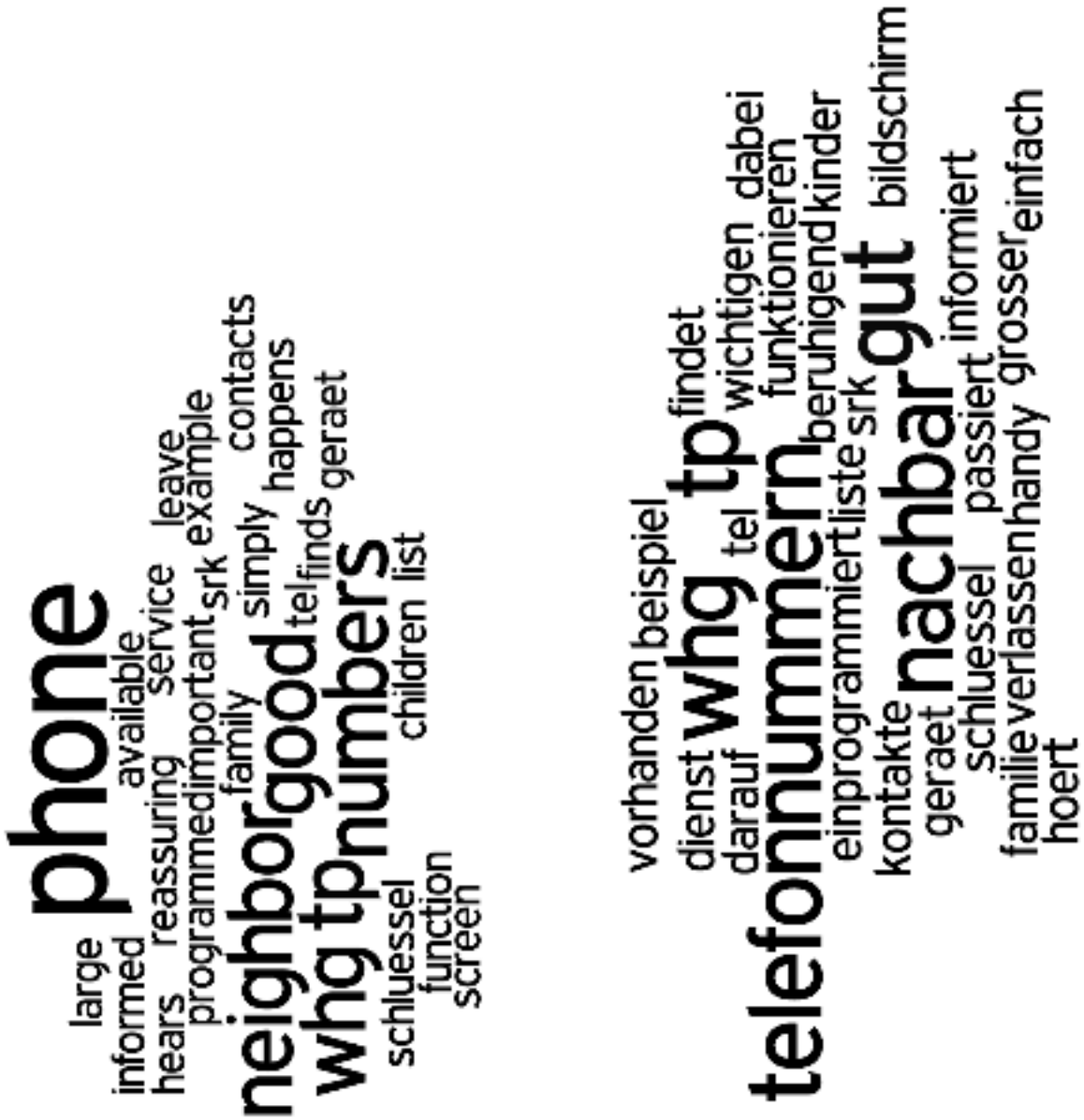
CH Interview Elderly Question 3b

3b	Was genau funktioniert an diesen Geräten weniger gut? Warum funktionieren die erwähnten Aspekte weniger gut?	What does not work so well with these devices? Why do the aspects you mentioned do not work so well?



CH Interview Elderly Question 4

4	Was genau mögen Sie an den von Ihnen verwendeten Geräten besonders gerne? Warum?	What do you like especially with these devices. Why?

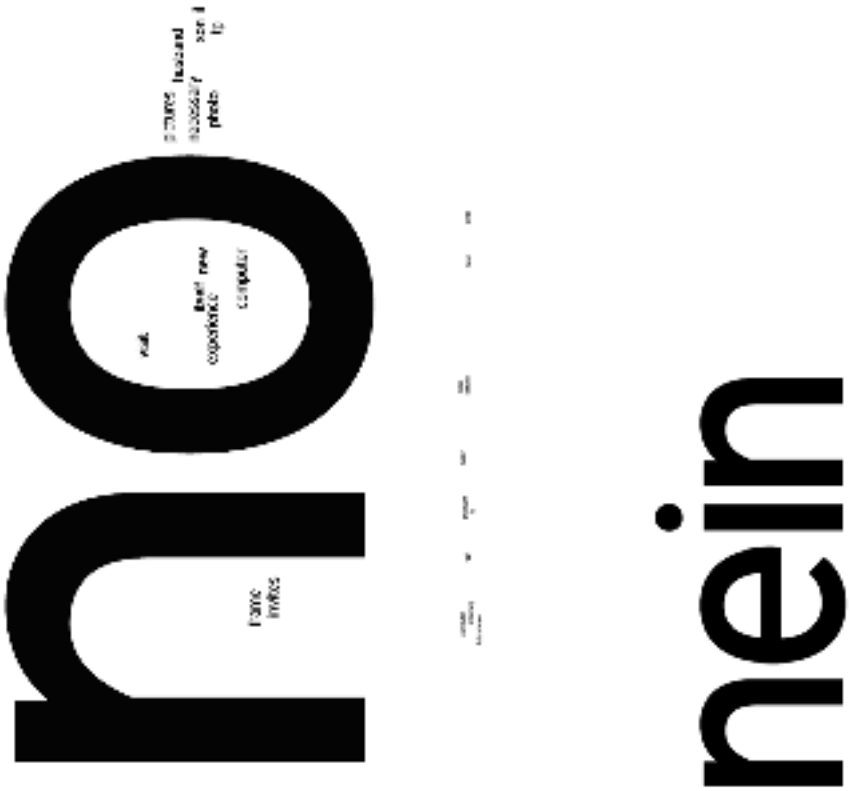


CH Interview Elderly Question 5

5	Und was genau mögen Sie an den von Ihnen verwendeten Geräten überhaupt nicht? Warum?	Especially what do you not like with these devices. Why?

CH Interview Elderly Question 6
English version: disposal of common words was switched off in order to get the “no”

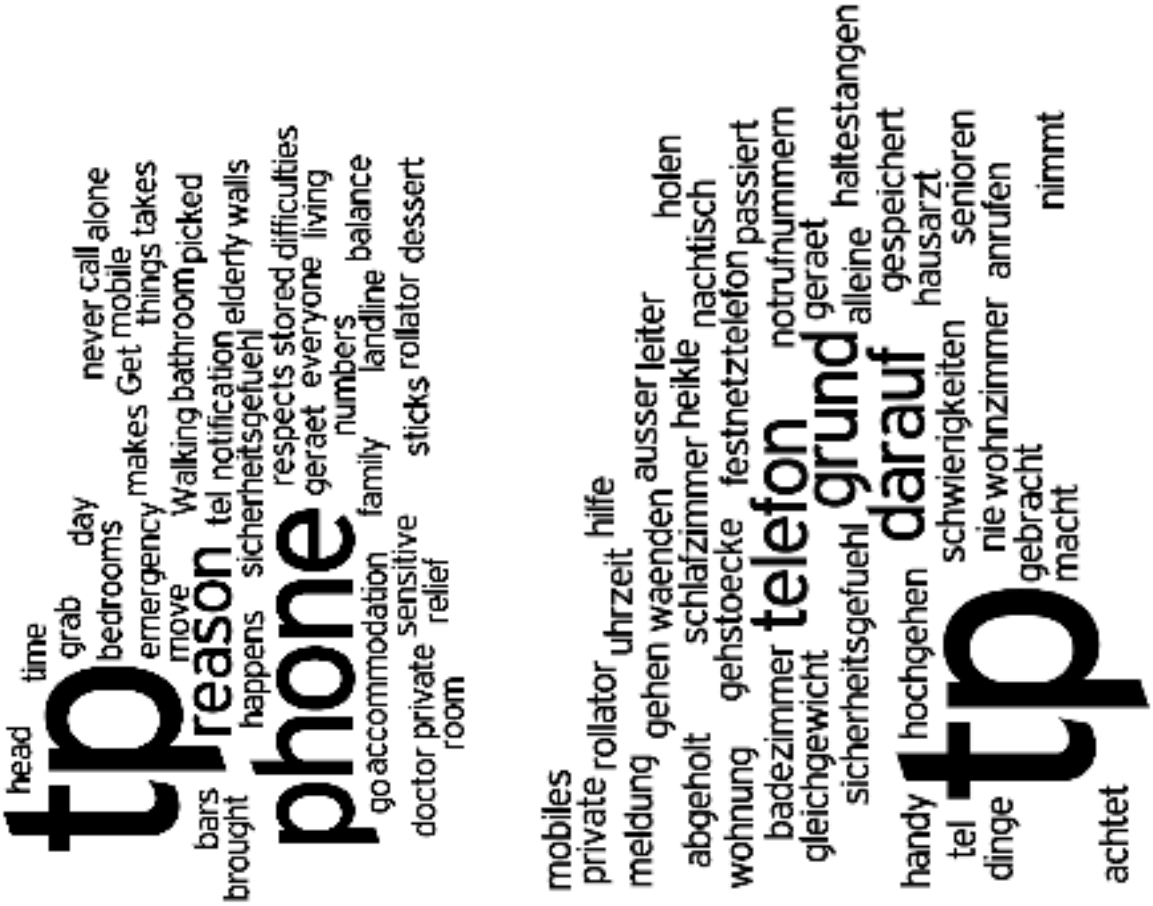
6	Gibt es jemanden in Ihrem Haushalt/Umfeld, der die von Ihnen angeführten Geräte ebenfalls nutzt?	In your household, is there someone who also uses the devices you mentioned?



CH Interview Elderly Question 7 – 9:
Less than 50 words in raw data. No cloud generated.

CH Interview Elderly Question 10

10	Gibt es einen Gegenstand in Ihrem Haushalt, der Ihnen im Alltag Sicherheit gibt? z.B. Gehstöcke, Rollator	In your houshold, is there a device, which provides safety in your daily life? (E.g. cane, rollator?)



CH Interview Elderly Question 11

11	In welchen Fällen bzw. Situationen benötigen Sie Hilfe? Möchten Sie in den erwähnten Fällen gerne mit ihren Angehörigen sprechen?	In which cases or situations do you need help? Do you like to talk about these cases with relatives?

CH Interview Elderly Question 11a:
Less than 50 words in raw data. No cloud generated.

CH Interview Elderly Question 12

12	Wie wichtig wäre es für Sie, wenn Ihr(e) BetreuerIn immer Bescheid wüsste über Ihr momentanes Befinden, ohne bei Ihnen persönlich vorbei schauen zu müssen? Was genau würde Ihnen daran gefallen/was weniger? Warum?	How important is it for you, that the caring person is always informed about your health/well-being without dropping by? What would you like about that, and what not? Why?

CH Interview Elderly Question 13

13	Gab es schon Situationen, in denen Sie nicht mehr selbst handeln konnten? Wenn ja, welche? Wer oder Was hat Ihnen geholfen? Was hätte sonst noch helfen können?	Have there been situations in which you were unable to act? If yes: which? Who or what has helped you? What could have helped?

CH Interview Elderly Question 14

14	Wodurch fühlen Sie sich sicherer im Alltag? Gibt es Geräte, Zeichen oder eine bestimmte Art der Kommunikation, die Sie mit Ihren Angehörigen für den Notfall vereinbart haben?	What makes you feel safer in daily life? Are there devices, signals or a special way of communication which you use with your relatives in case of emergency?

CH Interview Elderly Question 15 – 18:
Less than 50 words in raw data. No cloud generated.

CH Interview Elderly Question 19

19	Was könnte Sie im Hinblick auf die Betreuungssituation persönlich entlasten?	What could relief you (partially) in regard to your care situation?

CH Interview Caregiver Question 1

1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your possession?

CH Interview Caregiver Question 2

2	Wo befinden sich die von Ihnen erwähnten Geräte, die in Ihrem Haushalt zu finden sind, wo haben Sie diese jeweils positioniert?	Where are the devices (question 1) located in your apartment, or where did you place them?

CH Interview Caregiver Question 3

3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?

CH Interview Caregiver Question 3a

3a	Was genau funktioniert an diesen Geräten gut? Warum funktionieren die erwähnten Aspekte gut?	What works well with these devices? Why do the aspects you mentioned work well?

CH Interview Caregiver Question 3b:
Less than 50 words in raw data. No cloud generated.

CH Interview Caregiver Question 4

4	Was genau mögen Sie an den von Ihnen verwendeten Geräten besonders gerne? Warum?	What do you like especially with these devices. Why?

CH Interview Caregiver Question 5:
Less than 50 words in raw data. No cloud generated.

CH Interview Caregiver Question 6

6	Gibt es jemanden in Ihrem Haushalt/Umfeld, der die von Ihnen angeführten Geräte ebenfalls nutzt?	In your household, is there someone who also uses the devices you mentioned?

CH Interview Caregiver Question 7 – 15:
Less than 50 words in raw data. No cloud generated.

CH Interview Caregiver Question 16

16	Wie erfahren Sie aktuell davon, wenn es der von Ihnen betreuten Person nicht gut geht?	How do you get informed when the person you care for is sick?

CH Interview Caregiver Question 17

17	Verwenden Sie aktuell eine Art Meldesystem, um mehr Sicherheit in Ihre Betreuungssituation zu bringen? (z.B. Wenn Stores nicht hochgelassen werden, informiert Nachbar die Tochter; ein Gegenstand, der regelmäßig bewegt wird, damit Nachbarn merken, dass alles in Ordnung ist, usw.)	Do you use a certain type of reporting system to improve the reliability in your care situation? (E.g. if blinds are not opened in the morning, the neighbor informs the daughter; or an object that is moved regularly, so the neighbors realize that everything is fine.)

CH Interview Caregiver Question 18

18	Wie empfinden Sie Ihre aktuelle Betreuungssituation?	How do you feel in your current care situation?

CH Interview Caregiver Question 19

19	Was könnte Sie im Hinblick auf die Betreuungssituation persönlich entlasten?	What could relief you (partially) in regard to your care situation?

AT&CH Interview Caregiver

wohnzimmer
ehemann
tochter
tp
wohnung
kueche
mutter
radio
mann
handy
funktionen
laptop
smartphone
entsprechend
marke
internet
musik
geraet
telefonieren
sohn
player
hoeren
buero
sms
ok
fernsehgeraet
kinder
iphone
tv
mails
schlafzimmer
besucher
freunde
gut
nein
digitalkamera
funktioniert
fotos
telefonisch
waschmaschine
erreichbarkeit
neu
nachrichten
schwiegersohn
gebrauchsanweisung
familie
telefon
wichtig
bad
sendungen
bekannte
benutzt
whg
besitzt
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woche
eigenes
ueberall
zimmer
klar
probleme
kamera
soundanlage
samsung
einwandfrei
staubsauger
mail
stunden
haus
flexibel
ansehen
passiert
drucker
apple
pc
dvd
computer
cdunterwegs
zusammen
scanner
anruf
nutzung
kuehlschrank
bedienen
ferien
laeuft
bilder
vater
nutzen
eigenen
badezimmer
kaffeemaschine
haushaltsraum
abnimmt
schwester
waschmaschine
nebenraum
schreiben
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notruf
fotografieren
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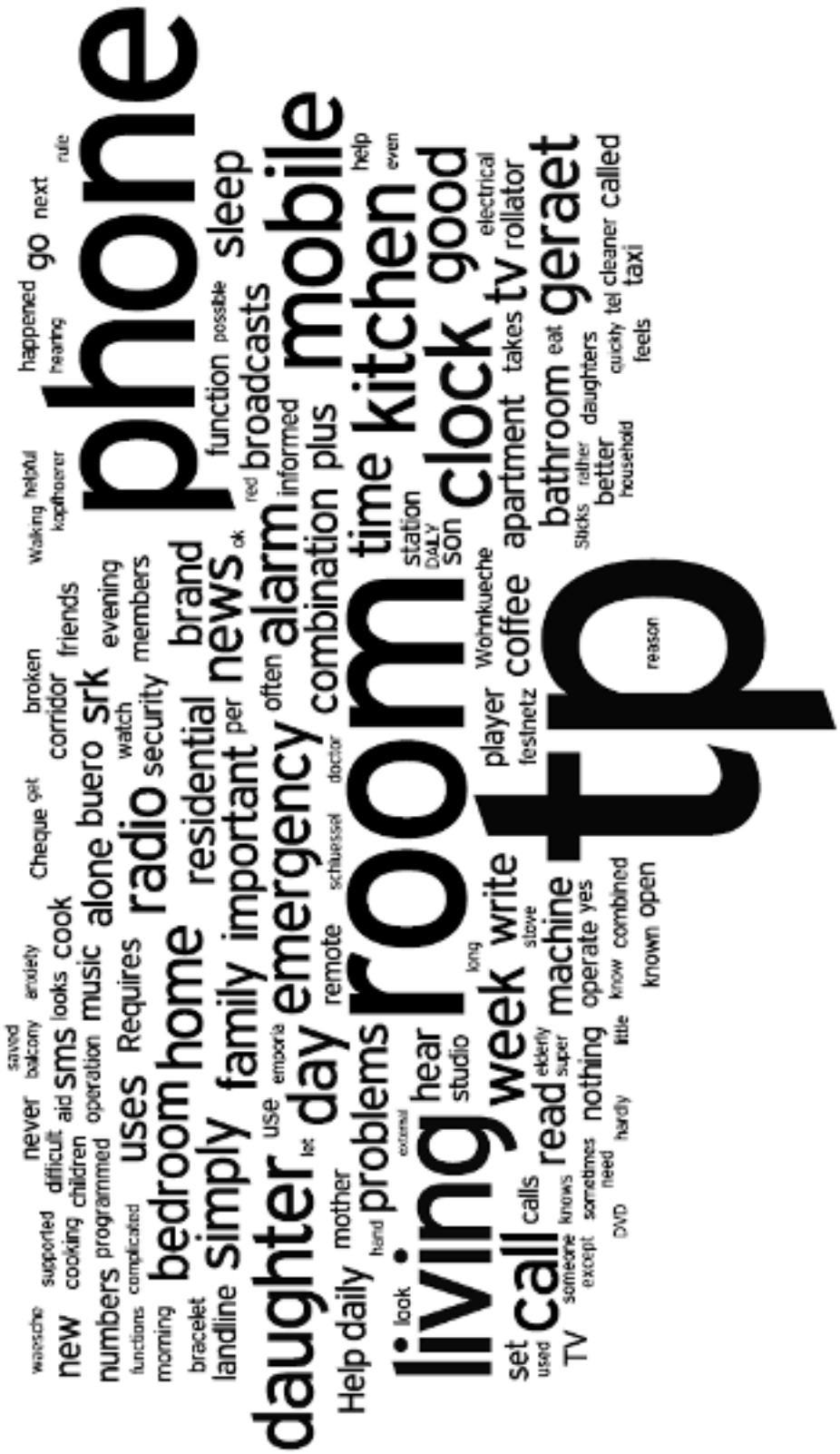
AT&CH Interview Elderly



AT&CH Interview Caregiver Question 1

1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your possession?

AT Interview Elderly Question 1

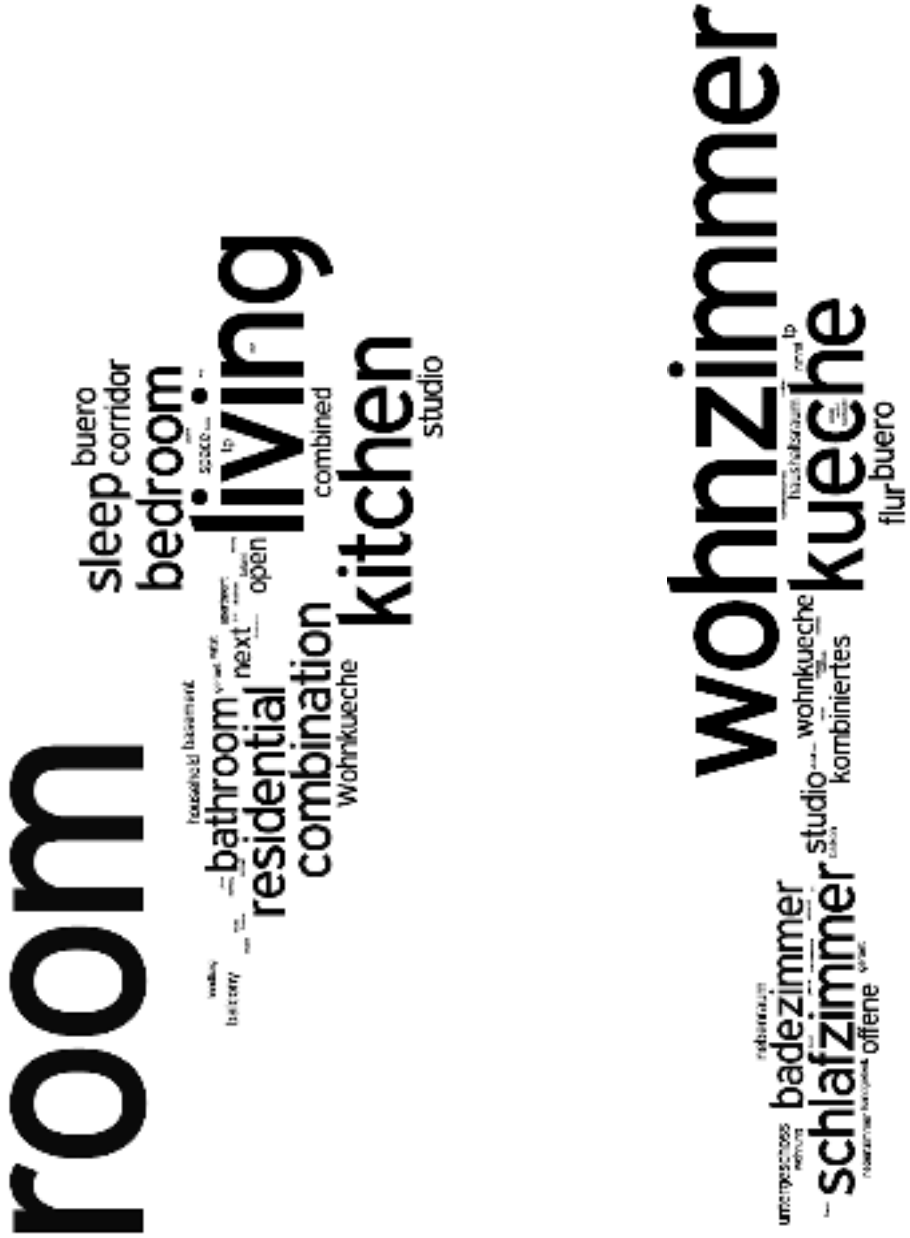
1	Welche technologischen Geräte besitzen Sie?	Which technical devices are in your possession?

AT&CH Interview Caregiver Question 2

2	Wo befinden sich die von Ihnen erwähnten Geräte, die in Ihrem Haushalt zu finden sind, wo haben Sie diese jeweils positioniert?	Where are the devices (question 1) located in your apartment, or where did you place them?

AT&CH Interview Elderly Question 2

2	Wo befinden sich die von Ihnen erwähnten Geräte, die in Ihrem Haushalt zu finden sind, wo haben Sie diese jeweils positioniert?	Where are the devices (question 1) located in your apartment, or where did you place them?



AT&CH Interview Caregiver Question 3

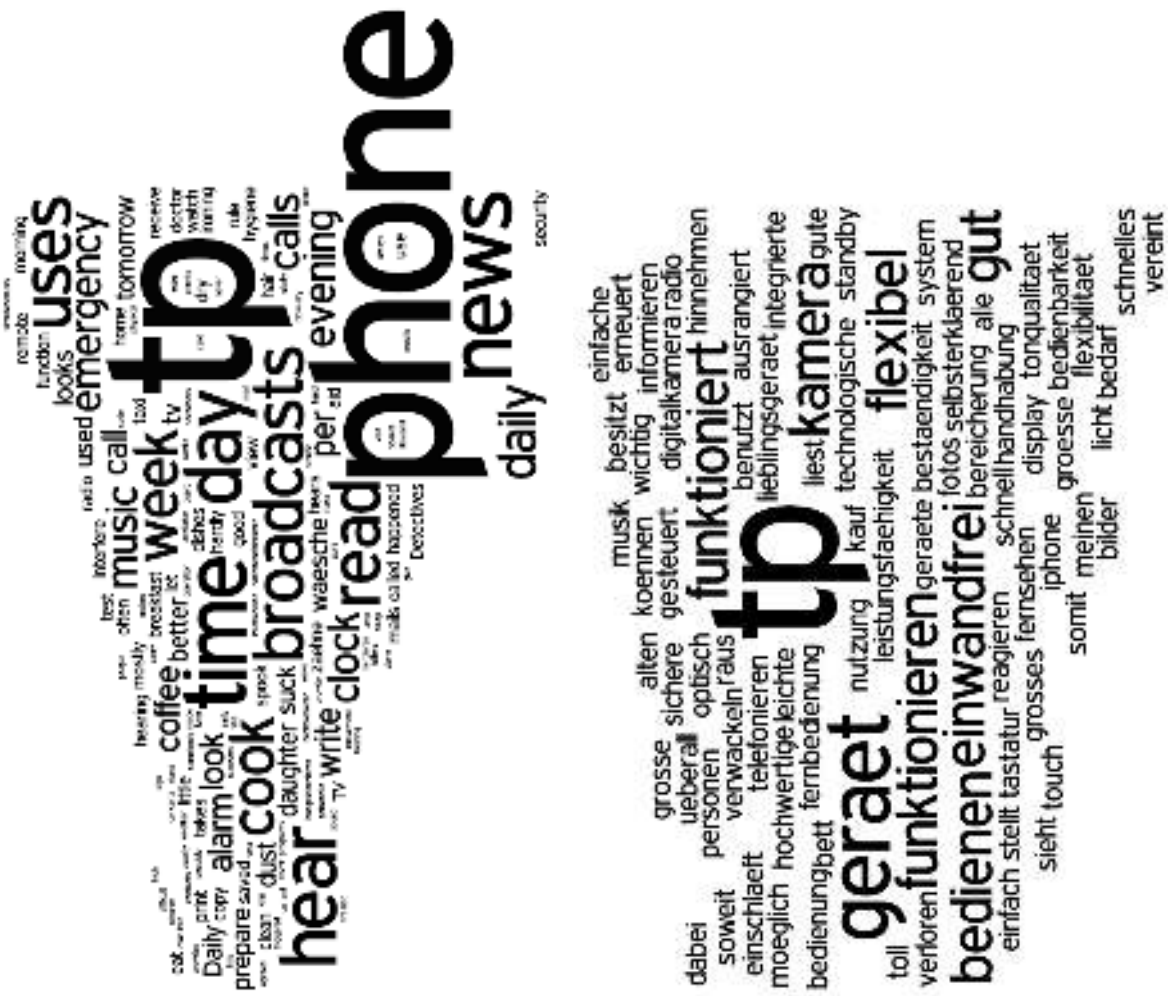
3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?

AT&CH Interview Elderly Question 3

3	Wofür verwenden Sie die von Ihnen erwähnten Geräte, die sich in Ihrem Haushalt befinden?	What are the devices (question 1) for?

AT&CH Interview Caregiver Question 3a

3a	Was genau funktioniert an diesen Geräten gut? Warum funktionieren die erwähnten Aspekte gut?	What works well with these devices? Why do the aspects you mentioned work well?



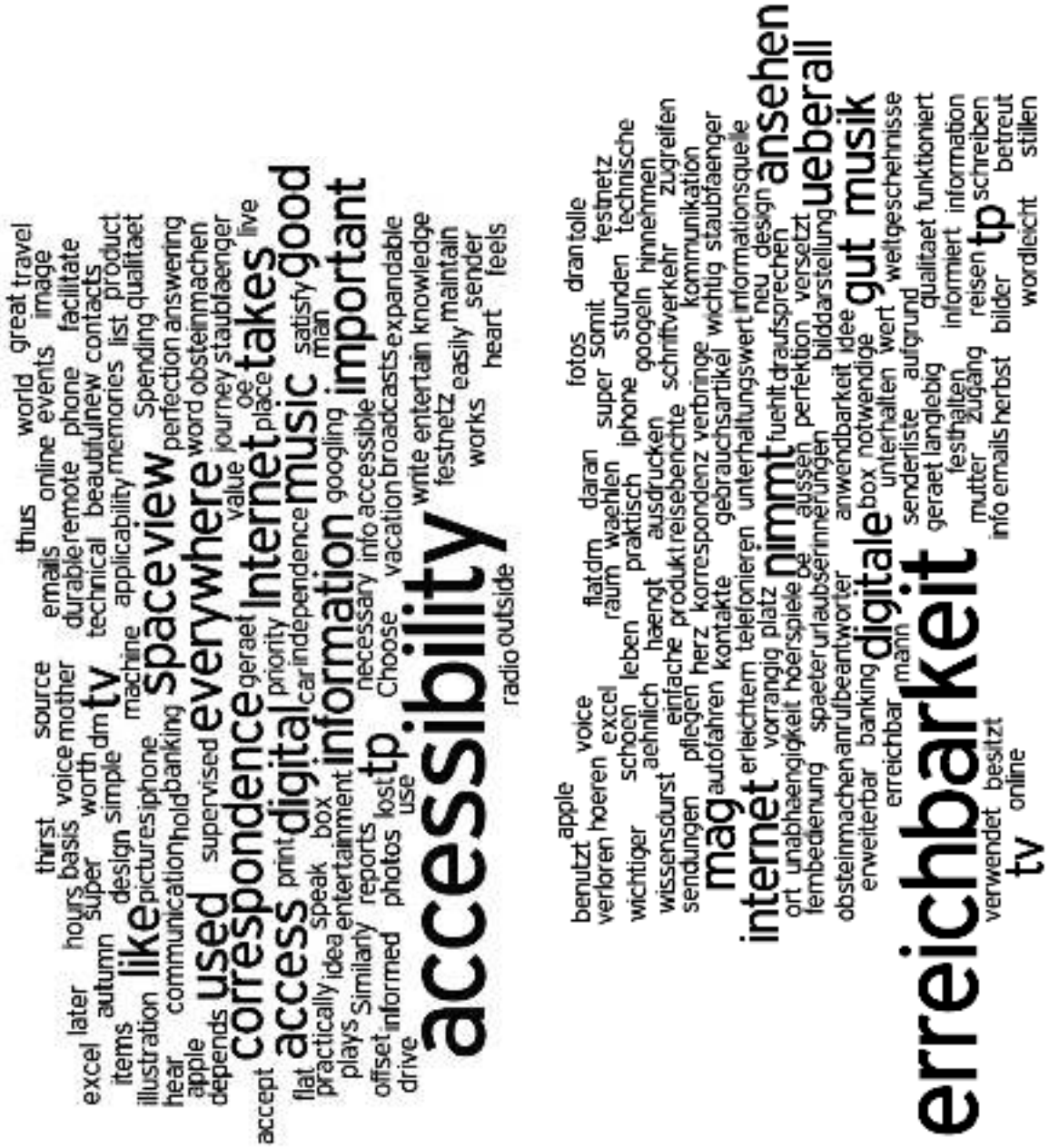
AT&CH Interview Elderly Question 3a

3a	Was genau funktioniert an diesen Geräten gut? Warum funktionieren die erwähnten Aspekte gut?	What works well with these devices? Why do the aspects you mentioned work well?

AT&CH Interview Caregiver Question 3b:
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Caregiver Question 4

4	Was genau mögen Sie an den von Ihnen verwendeten Geräten besonders gerne? Warum?	What do you like especially with these devices. Why?



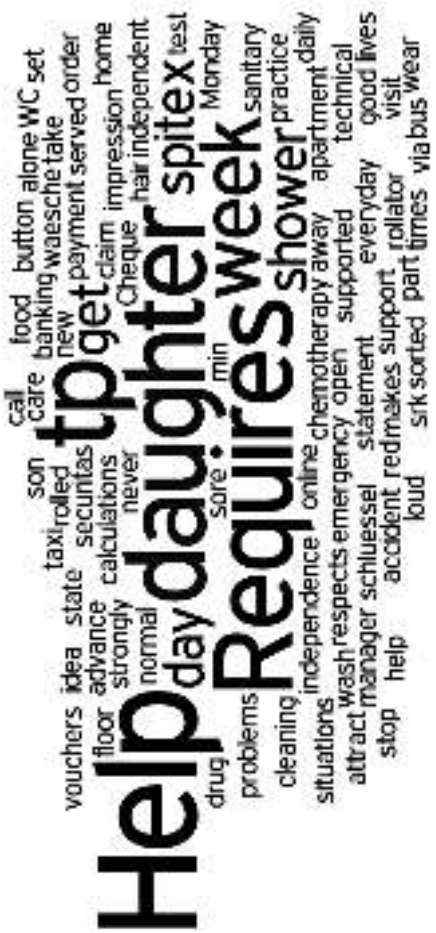
AT&CH Interview Elderly and Caregiver Question 4 – 10:
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Caregiver Question 11

Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Elderly Question 11

11	In welchen Fällen bzw. Situationen benötigen Sie Hilfe? Möchten Sie in den erwähnten Fällen gerne mit ihren Angehörigen sprechen?	In which cases or situations do you need help? Do you like to talk about these cases with relatives?



AT&CH Interview Caregiver Question 12
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Elderly Question 12

12	Wie wichtig wäre es für Sie, wenn Ihr(e) BetreuerIn immer Bescheid wüsste über Ihr momentanes Befinden, ohne bei Ihnen persönlich vorbei schauen zu müssen? Was genau würde Ihnen daran gefallen/was weniger? Warum?	How important is it for you, that the caring person is always informed about your health/well-being without dropping by? What would you like about that, and what not? Why?

AT&CH Interview Caregiver Question 13
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Elderly Question 13

13	Gab es schon Situationen, in denen Sie nicht mehr selbst handeln konnten? Wenn ja, welche? Wer oder Was hat Ihnen geholfen? Was hätte sonst noch helfen können?	Have there been situations in which you were unable to act? If yes: which? Who or what has helped you? What could have helped?

AT&CH Interview Caregiver Question 14
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Elderly Question 14

14	Wodurch fühlen Sie sich sicherer im Alltag? Gibt es Geräte, Zeichen oder eine bestimmte Art der Kommunikation, die Sie mit Ihren Angehörigen für den Notfall vereinbart haben?	What makes you feel safer in daily life? Are there devices, signals or a special way of communication which you use with your relatives in case of emergency?

AT&CH Interview Caregiver & Elderly Question 15
Data from at least one country missing. No combined wordcloud possible

AT&CH Interview Caregiver Question 16

16	Wie erfahren Sie aktuell davon, wenn es der von Ihnen betreuten Person nicht gut geht?	How do you get informed when the person you care for is sick?

AT&CH Interview Elderly Question 16

AT&CH Interview Caregiver & Elderly Question 17

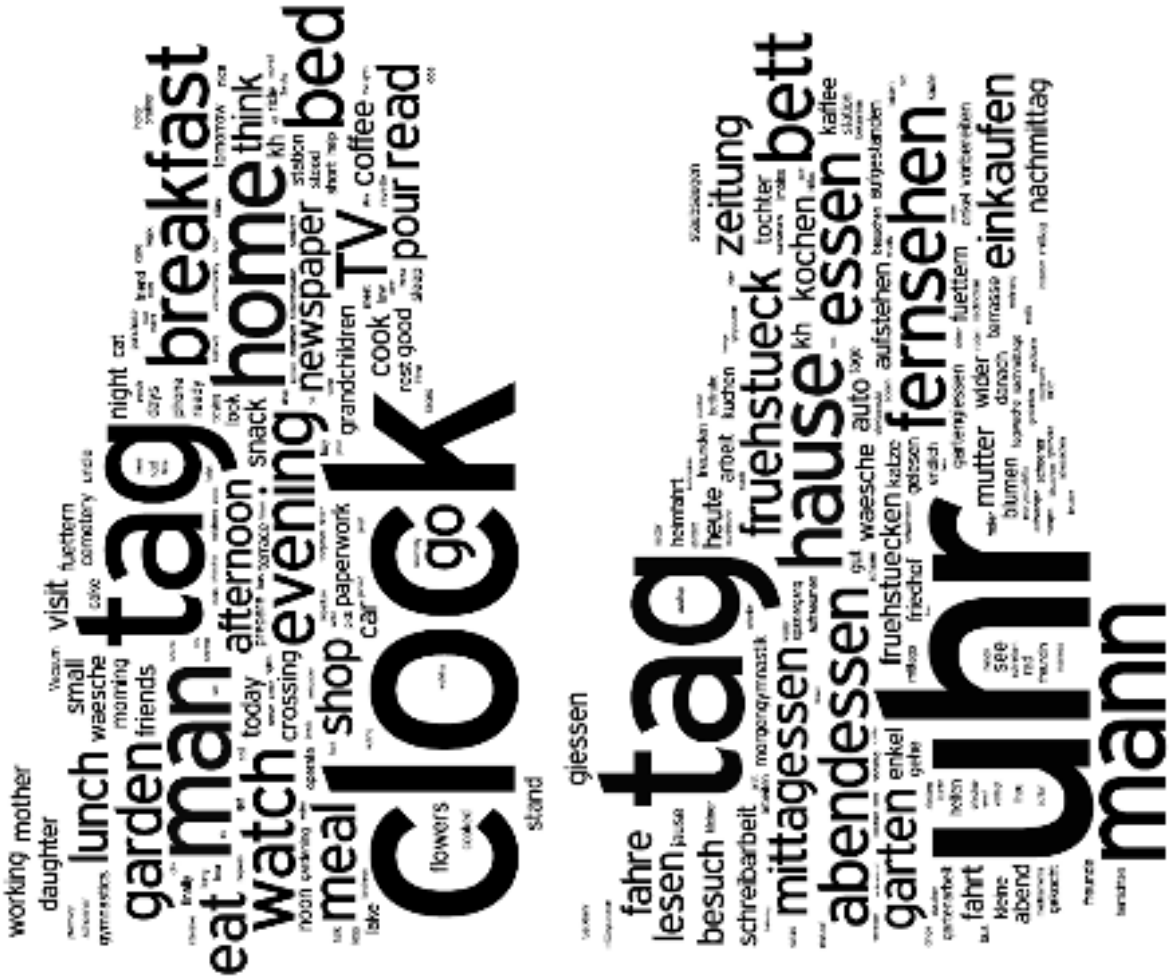
AT&CH Interview Caregiver & Elderly Question 18

AT&CH Interview Caregiver & Elderly Question 19

Data from at least one country missing. No combined wordcloud possible

Cultural Probes

AT Cultural Probes daily journal Caregiver
Based on "Kopie von Cultural_Probs_AT_Caregivers_german.xlsx"

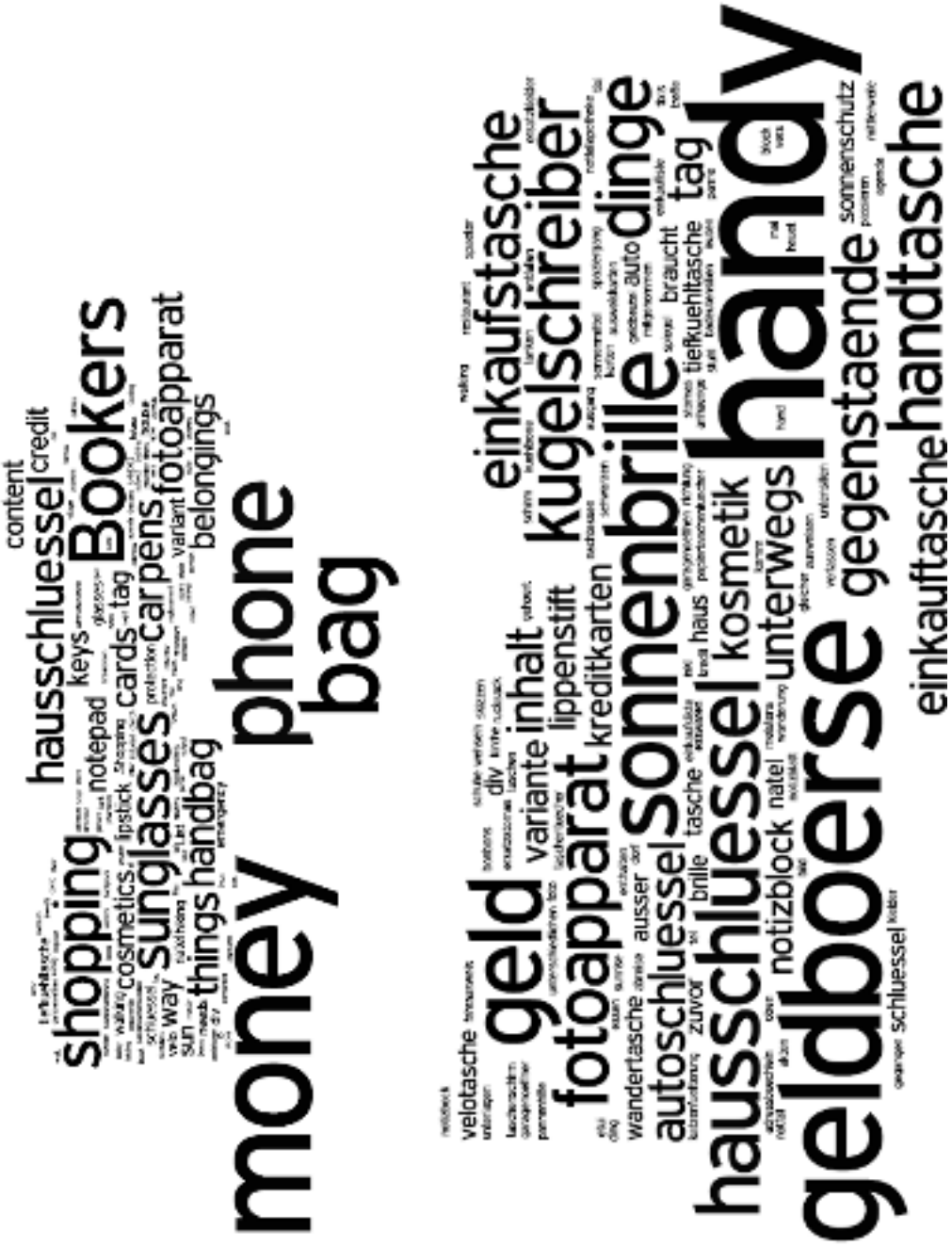


AT Cultural Probes Caregivers: favorite Objects (n.a.)
Source „Kopie von Cultural_Probs_AT_Caregivers_german.xlsx"
Too few words. No cloud generated.

CH Cultural Probes daily journal Caregiver
Based on file "Kopie von 2013-09-10-Ausw-CulturalProb-C-CH.xlsx"

CH Cultural Probes daily journal Elderly
Based on „Kopie von 2013-09-10-Ausw-CulturalProb-E-CH.xlsx“

CH Cultural Probes objects used by Elderly
Based on „Kopie von 2013-09-10-Ausw-CulturalProb-E-CH.xlsx“



CH Cultural Probes objects used by Caregiver
Based on „Kopie von 2013-09-10-Ausw-CulturalProb-E-CH.xlsx“

AT&CH Cultural Probes favorite objects used by Caregiver

AT&CH Cultural Probes favorite objects used by Elderly
Data from at least one country missing. No combined wordcloud possible

AT&CH Cultural Probes disliked objects used by Caregiver

AT&CH Cultural Probes disliked objects used by Elderly
Data from at least one country missing. No combined wordcloud possible

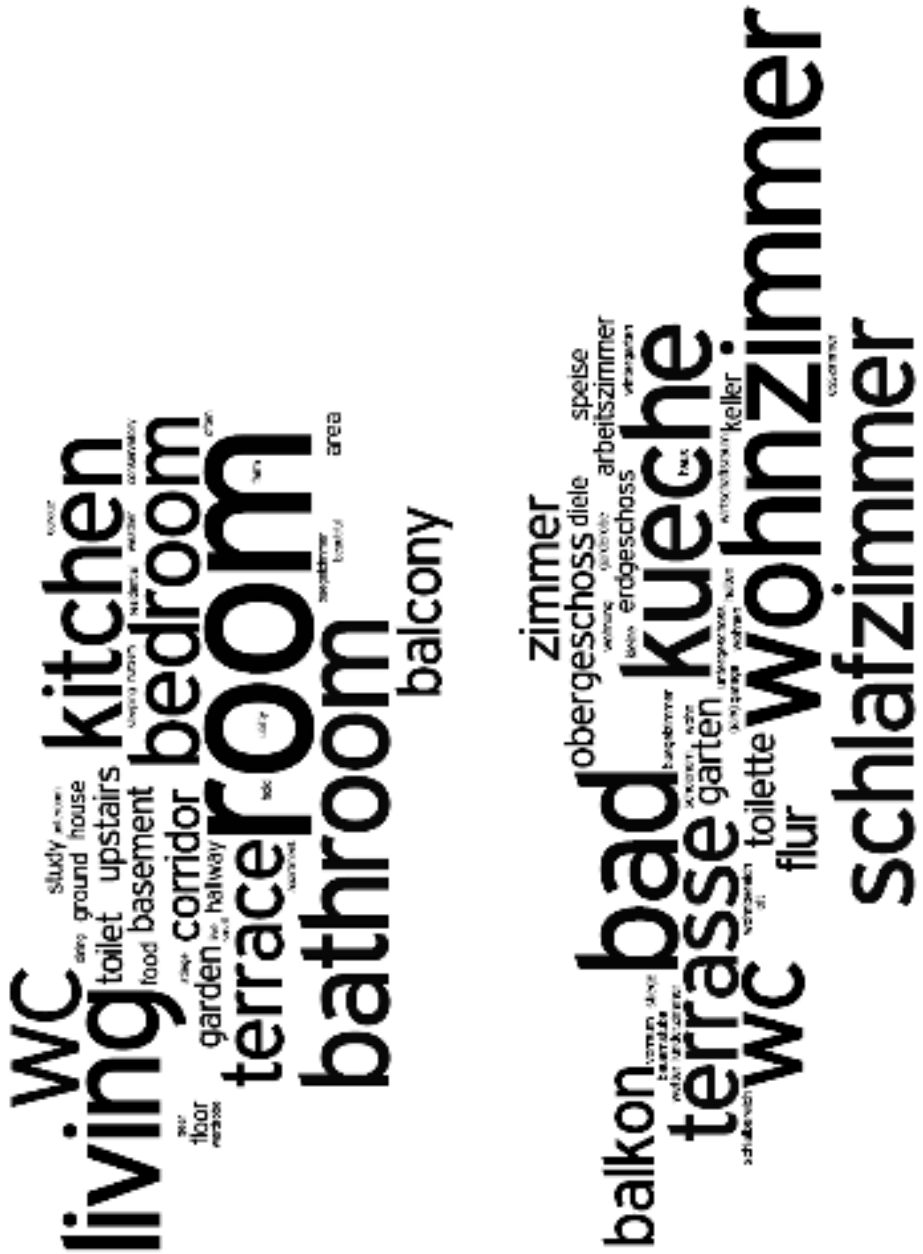
AT&CH Cultural Probes objects used by Caregiver

AT&CH Cultural Probes disliked objects used by Elderly
Data from at least one country missing. No combined wordcloud possible

AT&CH Cultural Probes, Caregiver daily life

AT&CH Cultural Probes, Elderly daily life
Data from at least one country missing. No combined wordcloud possible

AT&CH Cultural Probes, favourite place Caregiver



AT&CH Cultural Probes, favourite place Elderly
Data from at least one country missing. No combined wordcloud possible

Discussion/Limitations of method

The word clouds presented here suffer from limitations. Some of the shortcomings are described in the following.

When words are separated, like in the word “living room”, the result is not depicted as one combination of words, instead the two word can be in separate location within the word cloud. If the word “living” appeared also often in the text, and the same is true for “living room”, then it could become more difficult to perceive, that the dominance (big font size) of the word “living” and the relatively small word “room” are linked. This information is lost in word clouds as employed, here.

Errors in spelling decrease also the quality of the result. One approach to improve the quality in the future can be, to use spellchecking on the text source. This would also be advantageous in regard to written text in different dialects. E.g. in Germany and Austria you would write “grillen” (to barbeque) in Switzerland it is common to say “grillieren” instead. In the word clouds employed here, those would be two different words.

Since the raw source of the text was not written by one person but by several different persons who conducted the interviews, workgroups or transcribed information, it can not be excluded that varying abbreviations were used. Although they appear to be efficient during the time while writing the text, they also compromise the quality of the result in case that not all persons use consequently identical abbreviations.

A systematic error was introduced by substituting German umlauts, which obviously could not be handled by the translator tool. The google translator left such words as they were in the translation. There were even instances in which the translation was plainly wrong, e.g. “bad” (bath) was translated to “abd.”

However the definition of the threshold of 50 words was considered appropriate for text consisting of complete sentences, there were cases in which this number seemed too big. Especially when the text consisted mainly of one worded answers to specific questions, you could get 30 valid answers from 30 different persons resulting in a text body of 30 words. Excluding such a text body from further processing would not be a waste of information. Therefore the person performing the analysis decided in each of these special cases whether or not to generate a cloud. The Austrian questionnaire (based on file “Evaluation_Tombola_Probands-1.xlsx”) is an example of one word long answers.

When using the pictures of clouds for comparisons, a vital information is missing: How many words were in the text body the cloud was generated from? The result of a qualitative comparison of cloud A and cloud B is biased when A is based on 1000 words, but B is only based on 50 words. By comparing A and B visually, the impression could arise that the emphasized keywords in B are of the same importance of the ones of A, when in fact the word cloud resulting of a text body comprising the text sources of A and B, would lead to a new word cloud in which the formerly emphasized words are submerged in the noise of unimportant words in A.

A remarkable difference in number of words of a text body can arise by several factors. One of which is the number of test subjects answering the questions. If the number of test subjects differ from one country to the other, than it is highly likely that also the size of the text body differs. However, even within one country it is possible to obtain a skewed word cloud. E.g. are the answers of a single test subject in general 10 times longer than the answers of others, the opinion of this person is overrepresented in a text cloud.

Appendix B Results Data Analysis Affinity Diagramming

Affinity Diagramming

Based on Files:

2013-07-18-Auswertung Fokusgruppen Diskussion Schweiz (german)_neu.xlsx

Cultural_Probs_AT_Caregivers_german.xlsx

Kopie von Evaluation Tombola Probands-1.xlsx

Auswertung_Fokusgruppen_Diskussion_Oesterreich(11.07).xlsx

Kopie von 2013-08-06-Auswertung-Cultural Probes-CH-2.xlsx

There are two different ways presented of determining affinity diagrams. First, the examiner has worked through the raw data files mentioned above, and single bits (word or sentences) were extracted. Afterwards the bits were screened and bits of common topics were grouped. Then the groups were titled. The original result in German is given in the following section. A version translated into English is given after the following section.

For reasons of comparison, two persons were given the bits and they were asked to form groups of familiar bits and name the groups. The original results in German are given in section "Affinity Diagramming from person who had not read the raw data files (German original)." The translation into English is given in section "Affinity Diagramming from person who had not read the raw data files (English)"

Affinity Diagramming from person who had read the raw data files (German original)

Alarmauslösung

Automatisch, wenn man nicht mehr in der Lage ist den Knopf zu drücken
Email/ wenn computeraffin
Handy hilft der Person in Not nur selten
Knopf drücken
Mehrere Tage in der Wohnung liegen bis man vermisst wird
Nicht in der Lage sein sich selber zu melden
Notruf selber auslösen zum Test
Telefon ist ganz wichtig
Telefonieren
Vertrauen zu professionellem Serviceanbieter (rotes Kreuz)

Auszeit für Betreuer

Als betreuende Person sich ab und zu Hilfe holen können zur Entlastung
Ältere Personen warten bis sich jemand meldet
Der Weg von zu Hause in eine Pflegeeinrichtung ist schwer - Unterstützung?
Etwas für sich tun aber sicher sein, dass alles ok
Etwas für sich tun in Ruhe erledigen
Hilfe annehmen
Keine Hilfe/Information zur Diagnose

Emotion

Die Krankheit selber nicht wahrhaben wollen
Es gibt etwas wie Schicksal man kann nicht alles absichern
Es gibt Themen über die man nicht spricht
Keine Bezugsperson in der Nähe

Menschlichkeit
Menschlichkeit ist wichtig
Pflegender hat immer ein schlechtes Gewissen da kann man nicht machen.
Selbstbestimmtheit Hilfe anzunehmen/wollen
Sich verpflichtet fühlen
Überfordert in Akutsituation

Grenzen

Angehörige sind nicht immer erreichbar/haben gerade keine Zeit
In der Schocksituation zittert und kann nicht mehr wählen
Störung der Netzverbindung
Technische Probleme vermeiden
Ungeeignete Alterswohnung
Versagt die Technik in einer Notsituation entsteht Panik

Informationsaustausch

Auf der Strasse hilft immer jemand
Die Krankheit nicht nach aussen kommunizieren
Die strickende Oma ist Klischee
Einmal in der Woche Information
Im Nachhinein informieren der Betreuer
Kontakt regelmässig ohne feste Zeiten
Mehrmals täglich informieren
Nicht zu viele Statusinformationen von der betreuten Person, da man sonst nicht abschalten kann (in den Ferien)
Persönlicher Besuch ist sehr wichtig
Schweigen/Nichts sagen
Selber eine Lösung finden
SMS ist schnell und günstig
Solange persönlicher Kontakt vorhanden ist, ist Überwachung ok
Technische Lösungen erforderlich
Unterwegs informiert sein, dass alles ok ist

Messsystem

Babyphone auf Distanz
Beim Einkaufen merkt man ob jemand nicht mehr kommt
GPS-Ortung wie Kinderhandys
In- und Outdoor mit einem Gerät
Kleine Veränderungen z.B. in der Sprache sind Hinweise, dass etwas nicht stimmt
Nachbar fällt auf, dass gewohntes nicht passiert
Stellung der Storen
Wenn Briefkasten nicht geleert dann stimmt was nicht

Organisation

Alterswohnung
Beide Partien nur selten im gleichen Haus
Für Betreuende ist ein Handy muss
Securitas hat einen Schlüssel
Technische Geräte müssen einfach bedienbar sein
Verwandtschaft/Kinder in der Nähe
Wohnungsschlüssel im Haus zugänglich machen

Situation

Der betreuenden Person zu liebe ein Notrufsystem verwenden
Die Schwere der Situation entscheidet welche Aktion erforderlich ist
Man wächst mit den Situationen
Partner hilft oder sorgt dass Hilfe kommt
Spitalentlassung nur wenn Notrufsystem vorhanden
Spitex hilft mit
Überfordert bei Pflegeproblemen
Vorwürfe wenn etwas passiert ist, was hätte man zur Vermeidung machen können
Wer kann alles aus der Familie helfen

Affinity Diagramming from person who had read the raw data files (English)

Corrected Google Translator result.

Alarming
Automatically when no longer in a position to press the button
Email / when affinity to computers
Mobile phone helps the person in need rarely
press the button
Several days in the apartment until one misses
Not be able to report himself
Emergency alarm to the test itself
Phone is very important
phone
Confidence to professional service providers (red cross)

Break for carers
As caregivers can get help from time to time to relieve
Older people wait for calls / visits
The path from home to a nursing facility is difficult - support ?
Do something for yourself , but be sure that everything is ok
Do something for yourself alone and without time pressure
accept help
No help / information for diagnosis

emotion
Not want to accept the disease itself
There is something like destiny you can not be protect completely
There are issues about which one does not speak
No reference person in the vicinity
humanity
Humanity is important
The carer has always a bad conscience
To accept self-determination if help wanted
Feel obliged
Overwhelmed in acute situation

limits
Family members are not always available / just do not have time
In the shock situation trembles and can not dial
Disruption of the network connection
Avoid technical problems
Unsuitable apartment for elderly
In case of failing technique in an emergency situation leads to panic

information exchange
On the road someone always helps
Not communicate the disease to the outside
The Knitting Grandma is cliché
Once a week information
Informing cargiver afterwards
Contact regularly without fixed times
Inform Several times a day
Not too many status information of the supervised person , because otherwise you cannot relax (during the holidays)

Personal visit is very important
Not Mentioning / say nothing
Find yourself a solution
SMS is fast and cheap
As long as personal contact is present, monitoring is ok
Technical solutions required
Be informed that everything is ok while travelling

measurement system
Baby monitor on distance
When shopping, you realize that someone is not coming anymore
GPS tracking cell phones as for children
Indoor and outdoor tracking unit as a single device
Small changes for example in the language are indications that something is wrong
Neighbor noticed that familiar things (behavioral) does not happen
Position of the blinds
If mailbox is not empty then something is wrong

organization
apartment for elderly
Elderly and Carers only rarely in the same house
For carers in a mobile phone is a must
Securitas has a key
Technical equipment must be easy to operate
Family / children in vicinity
Make accessible apartment keys in the house

situation
To do the caregiver a favor of love: use an emergency call system
The severity of the situation, decides what action is required
you grow with the situations
Partner helps or makes sure that help comes
Hospital discharge only when emergency call system available
Professional home care helps
Overwhelmed with care problems
Blame myself if something happened, what could have been done to avoid
Who can help from the family

Affinity Diagramming from person who had not read the raw data files (German original)
Einstellung der Gepflegten

Auf der Strasse hilft immer jemand
Der betreuenden Person zu liebe ein Notrufsystem verwenden
Die Krankheit nicht nach aussen kommunizieren
Die Krankheit selber nicht wahrhaben wollen
Es gibt etwas wie Schicksal man kann nicht alles absichern
Es gibt Themen über die man nicht spricht
Hilfe annehmen
Man wächst mit den Situationen
Schweigen/Nichts sagen
Selber eine Lösung finden
Selbstbestimmtheit Hilfe zunehmen/wollen

In der Nähe

Alterswohnung
Menschlichkeit ist wichtig
Partner hilft oder sorgt dass Hilfe kommt
Securitas hat einen Schlüssel
Spitex hilft mit
Verwandtschaft/Kinder in der Nähe
Wer kann alles aus der Familie helfen
Wohnungsschlüssel im Haus zugänglich machen

Indikatoren ohne System

Beim Einkaufen merkt man ob jemand nicht mehr kommt
Kleine Veränderungen z.B. in der Sprache sind Hinweise, dass etwas nicht stimmt
Mehrere Tage in der Wohnung liegen bis man vermisst wird
Nachbar fällt auf, dass gewohntes nicht passiert
Wenn Briefkasten nicht geleert dann stimmt was nicht

Kontakt zum Betreuer

Etwas für sich tun aber sicher sein, dass alles ok
Etwas für sich tun in Ruhe erledigen
Nicht zu viele Statusinformationen von der betreuten Person, da man sonst nicht abschalten kann (in den Ferien)
Pflegender hat immer ein schlechtes Gewissen da kann man nicht machen.
Unterwegs informiert sein, dass alles ok ist

Pro System

Als betreuende Person sich ab und zu Hilfe holen können zur Entlastung
Ältere Personen warten bis sich jemand meldet
Angehörige sind nicht immer erreichbar/haben gerade keine Zeit
Beide Partien nur selten im gleichen Haus
Der Weg von zu Hause in eine Pflegeeinrichtung ist schwer - Unterstützung?
Einmal in der Woche Information
Handy hilft der Person in Not nur selten
In der Schocksituation zittert
und kann nicht mehr wählen
Keine Bezugsperson in der Nähe
Keine Hilfe/Information zur Diagnose
Sich verpflichtet fühlen
Überfordert bei Pflegeproblemen
Überfordert in Akutsituation
Ungeeignete Alterswohnung
Vorwürfe wenn etwas passiert ist, was hätte man zur Vermeidung machen können

Technik

Babyphone auf Distanz
Email/ wenn computeraffin
Für Betreuende ist ein Handy muss
GPS-Ortung wie Kinderhandys
In- und Outdoor mit einem Gerät
Knopf drücken
SMS ist schnell und günstig
Stellung der Storen

Technische Geräte müssen einfach bedienbar sein
Technische Lösungen erforderlich

Technische Störungen

Störung der Netzverbindung
Technische Probleme vermeiden
Versagt die Technik in einer Notsituation entsteht Panik

wichtiger Kontakt zum Gepflegten

Automatisch, wenn man nicht mehr in der Lage ist den Knopf zu drücken
Die strickende Oma ist Klischee
Kontakt regelmässig ohne
feste Zeiten
Mehrmals täglich informieren
Nicht in der Lage sein sich selber zu melden
Notruf selber auslösen zum Test

Zusammenarbeit Betreuung

Die Schwere der Situation entscheidet welche Aktion erforderlich ist
Im Nachhinein informieren der Betreuer
Menschlichkeit
Persönlicher Besuch ist sehr wichtig
Solange persönlicher Kontakt vorhanden ist, ist Überwachung ok
Spitalentlassung nur wenn Notrufsystem vorhanden
Telefon ist ganz wichtig
Telefonieren
Vertrauen zu professionellem Serviceanbieter (rotes Kreuz)

Affinity Diagramming from person who had not read the raw data files (English)

Corrected Google Translator result.

Attitude of those in care

On the road you always find someone for help
To do the caregiver a favor of love, use an emergency call system
Diseases are not communicated to the outside
Not want to accept the disease itself
There is something like destiny; there is no absolute safety
There are issues about which one does not speak
accept help
You grow with the situations
Not mentioning / say nothing
Find yourself a solution
Self-determination: Choice whether help is wanted or not

Close

Apartment for elderly
Humanity is important
Partners helps or calls for help
Securitas has a key
Home care (Spitex) helps with
Family / children in vicinity
Who can help from the family?
Make apartment keys accessible in the house

Indicators without system

When shopping, you realize that someone does not come
Small changes, for example in the language, are indications that something is wrong
Laying several days in the apartment until one is missed
Neighbor noticed that familiar things (behavioral) do not happen
If mailbox is not empty then something is wrong

Contact the Carers

Do something for yourself , but be sure that everything is ok
Do something for yourself without time pressure
Not too much status information of the supervised person , because otherwise you can not relax (during the holidays)
Caring makes always a guilty conscience. You can not change that.
Be informed during travelling that everything is ok.

Pro system

Caregiver: To be able to get help from time to time
Older people wait until someone reports
Family members are not always available / just do not have time
Carer and elderly are only rarely in the same house
The path from home to a nursing facility is difficult - support ?
Once a week information
Mobile phone helps the person in need rarely
Trembles in the shock situation and can no longer dial
No helping person in the vicinity
No help / information for diagnosis
Feel obliged
Overwhelmed with caring problems

Overwhelmed in acute situations
Unsuitable apartment for elderly
Blaming yourself when something has happened, constantly thinking "what could have been done to avoid it"

technology
Baby monitor on distance
When affinity for computers: Email
For carers, a mobile phone is must
GPS tracking as for children
Indoor and outdoor tracking in a single device
press the button
SMS is fast and cheap
Position of the blinds
Technical equipment must be easy to operate
Technical solutions required

Technical problems
Disruption of the network connection
Avoid technical problems
When technique fails in an emergency situation panic arises

Important contact for the elderly
Automatically, when no longer in a position to press the button
The knitting Grandma is cliché
Contact us regularly without fixed times
Inform several times a day
Not be able to report myself
Emergency alarm to the test the system itself

Cooperation support
The severity of the situation, decides what action is required
the carer is informed after something has happened
humanity
Personal visit is very important
As long as personal contact is present, monitoring is ok
Hospital discharge only when emergency call system available
Phone is very important
phone
Confidence in professional service providers (red cross)

Appendix C Results Data Analysis AEIOU Method

AEIOU Method

AEIOU, as adapted by Wasson (Wasson, 2000), stands for 5 elements to be coded: Activity, Environment, Interaction, Object, and User.

- **Activities** are goal-directed sets of actions—paths towards things people want to accomplish. What are the modes people work in, and the specific activities and processes they go through?
- **Environments** include the entire arena where activities take place. What is the character and function of the space overall, of each individual's spaces, and of shared spaces?
- **Interactions** are between a person and someone or something else; they are the building blocks of activities. What is the nature of routine and special interactions between people, between people and objects in their environment, and across distances?
- **Objects** are building blocks of the environment, key elements sometimes put to complex or unintended uses (thus changing their function, meaning and context). What are the objects and devices people have in their environments and how do they relate to their activities?
- **Users** are the people whose behaviors, preferences, and needs are being observed. Who is there? What are their roles and relationships? What are their values and prejudices?

Source: http://help.ethnohub.com/guide/aeiou-framework

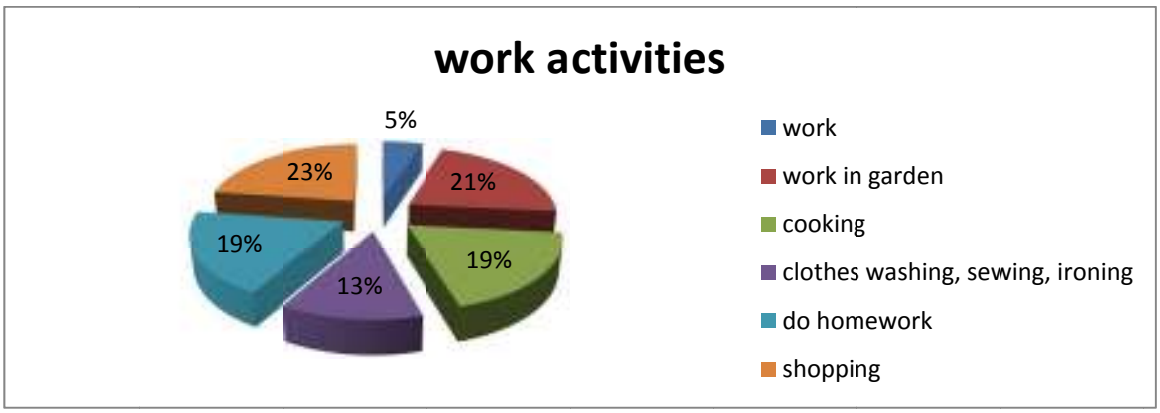
The AEIOU method has it strengths in the field. It can serve as lens through which the assessing person can perceive the interrelations in a more structured way, and sort the observations into the 5 defined groups. It has also been applied with assessing human-machine interaction (Lee, et al., 2012).

Picture from the book (Hanington, 2012)

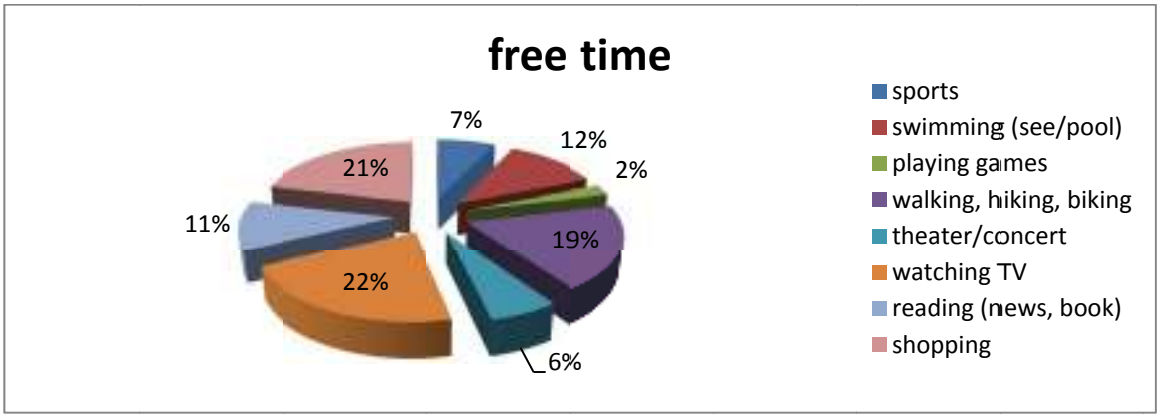
AT Caregiver Cultural Probes

Activities

Compare also to word cloud in section “AT Cultural Probes daily journal Caregiver”



Source: file “summary_cultural probes_AT.doc”



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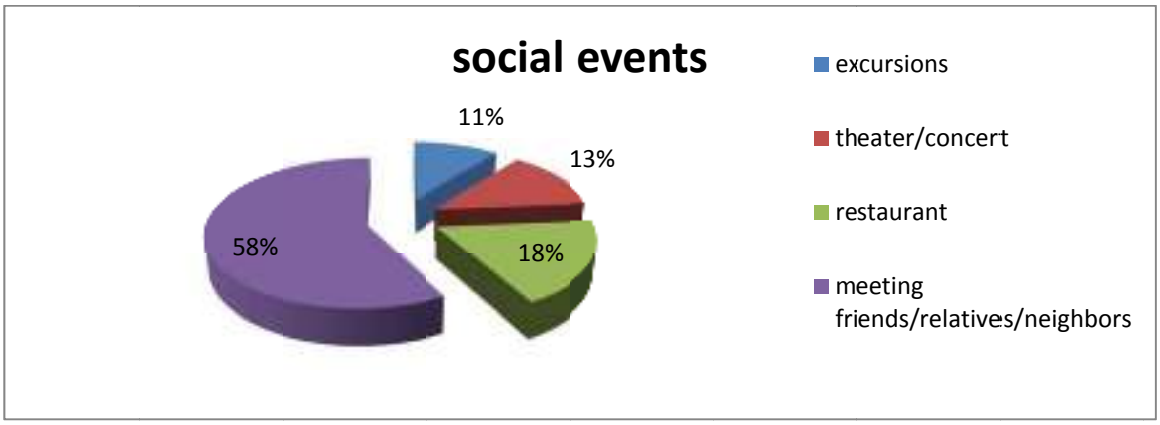
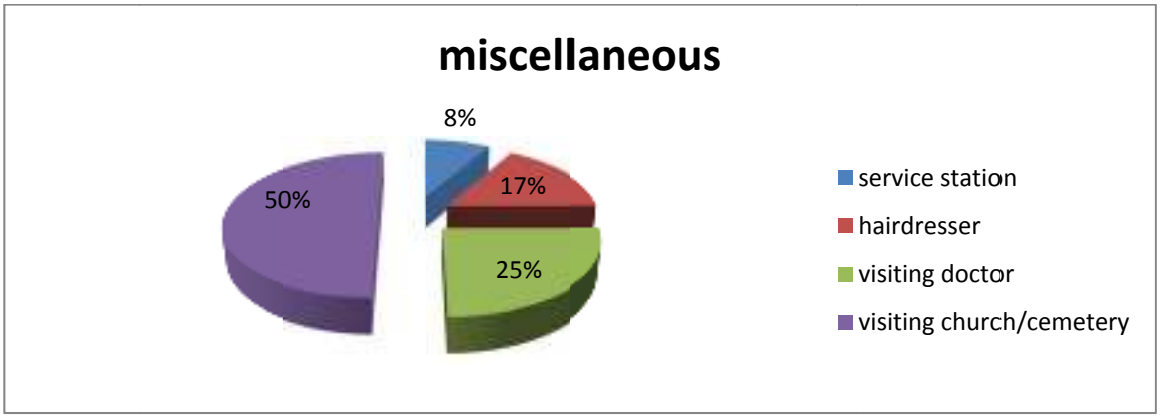


Source: file “summary_cultural probes_AT.doc”



Source: file “summary_cultural probes_AT.doc”

Environments

Figure 85: Environments Caregiver AT

Interactions

Communication via land lane phone, mobile home, PC mailing

Objects

books (2), PC, kitchen, paintings, pictures from journey, special doll collection (Trachtenpuppensammlung), bike, mobile home, secretary, stove, special duster from Swiffer, photo collection, home trainer [at1]

Talismans: madonna wooden figure, picture from husband

Figure 86: Objects Caregiver AT

Users

Mostly female, 72 years, married, in pension, caring for husband or relative

AT Elderly Cultural Probes (n.a.)

No data from cultural probes available.

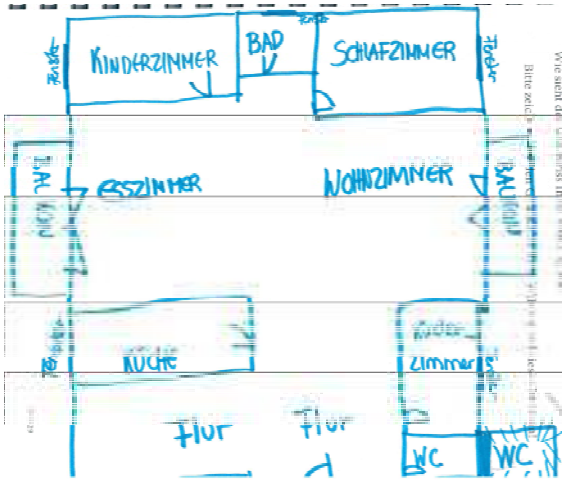
CH Caregiver Cultural Probes

<u>Activities</u>

Coping with the bad mood of elderly (professional carers)

Word cloud from section “CH Cultural Probes daily journal Caregiver”

Environments:



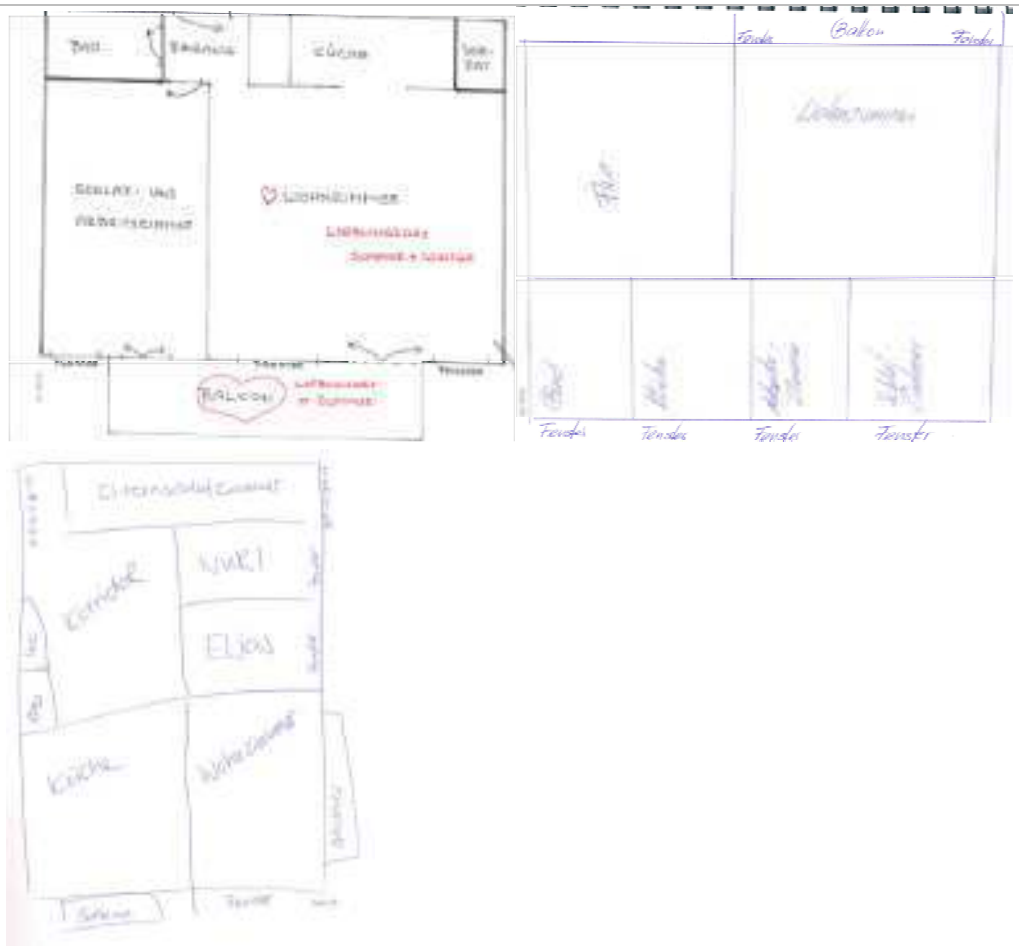


Figure 87: Environments Caregiver CH

<u>Interactions</u>

Immediate (voice, presence, direct help) care for others (professional carers)
Drinking coffee / wine
Playing board/card games with friends/neighbors
visits
Care of children by playing with them and support them with homework.
Phone calls
Difficult to receive bad messages in front of other people
Carer and elderly Shopping together
Hearing impairment
Carer reads out to elderly
Cat/pet feeding

Figure 88: Interactions Caregiver CH

Objects

Couch, laptop, radio

Compare word cloud with section “CH Cultural Probes objects used by Caregiver“

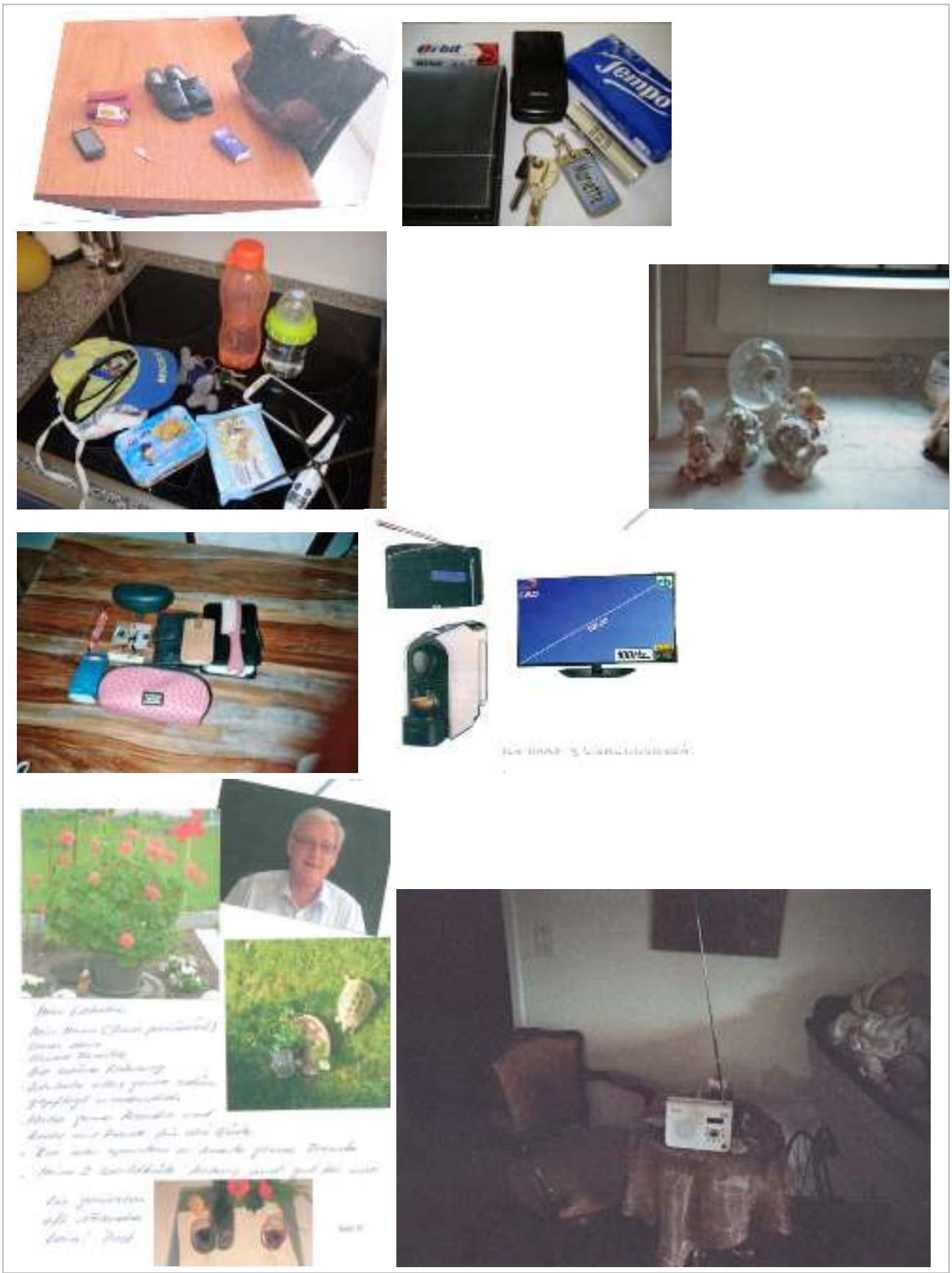


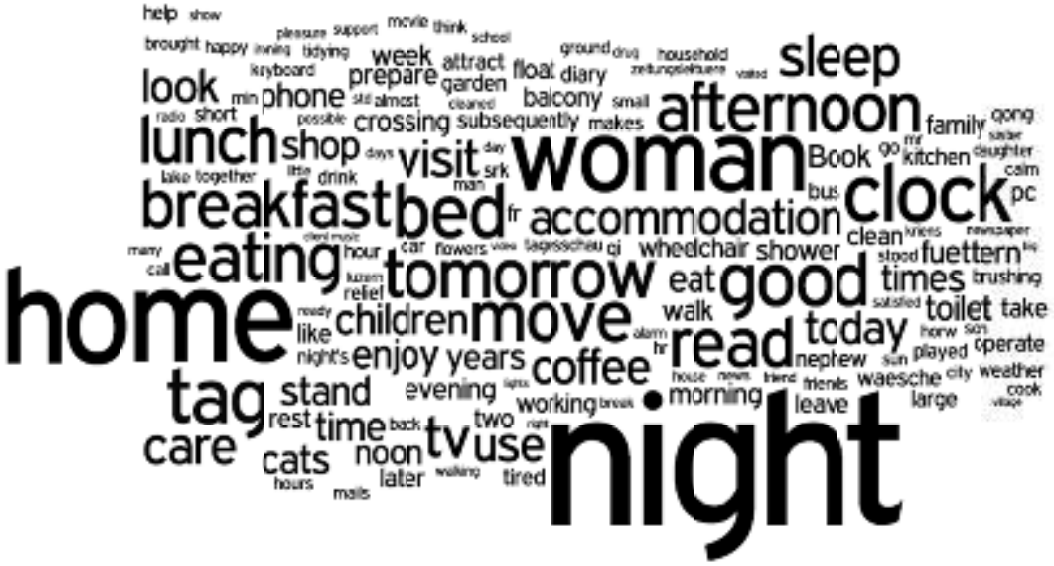
Figure 89: Objects Caregiver CH

<u>Users</u>
Female
Working
55 years
Professional carers
Has cat

CH Elderly Cultural Probes

Activities

Resting



Compare to word cloud in section “CH Cultural Probes daily journal Elderly”

Environments

Figure 90: Environments Elderly CH

Interactions
Playing with grandchildren
Email/PC
Lunch/dinner with others
Phone calls
At church
In Restaurant
Cooking for others
In choir/ With music instruments

Objects
China
Car

Figure 91: Objects Elderly CH

Compare to section “CH Cultural Probes objects used by Elderly”

Users
72 years
in pension
well paid former jobs

Appendix D Interpretation of Results – Students Workshop

careconnect

Concept "Care Connect"

careconnect

WAS? CARECONNECT verbindet Menschen. Speziell ältere Personen können hier vom Komfort der einfachen Bedienung und vom Gefühl der Sicherheit profitieren.

WER? Ältere oder auch Kinder brauchen in gewissen Situationen Hilfe oder einfach nur Rückhalt und Sicherheit.

WIE? Ein modular aufgebautes Kommunikationssystem von kompatiblen Geräten schafft Verbindung zwischen zwei Nutzergruppen (z. B. Elderly und Caregiver).

WANN? Besonders in der späten Lebensphase, in der noch genügend körperliche und geistige Leistungsfähigkeit vorhanden ist steigt das Bedürfnis nach der einfachen Kontaktaufnahme.

WO? CARECONNECT ermöglicht allen Beteiligten das Verbleiben in ihrer gewohnten Umgebung. Die Geräte werden hauptsächlich im Haushalt genutzt. Der Unterstützer greift durch Handy, Laptop, Tablet, usw. auf die Geräte der Mutter zu.

WARUM? CARECONNECT ermöglicht Kommunikation, die normal läuft. Die Geräte sind so gestaltet, dass man sie leicht verstehen kann. Sogar das liebgewordene, alte Radio kann in die Konfiguration eingebaut werden. Auf diese Weise kann auch die Umwelt geschont werden.

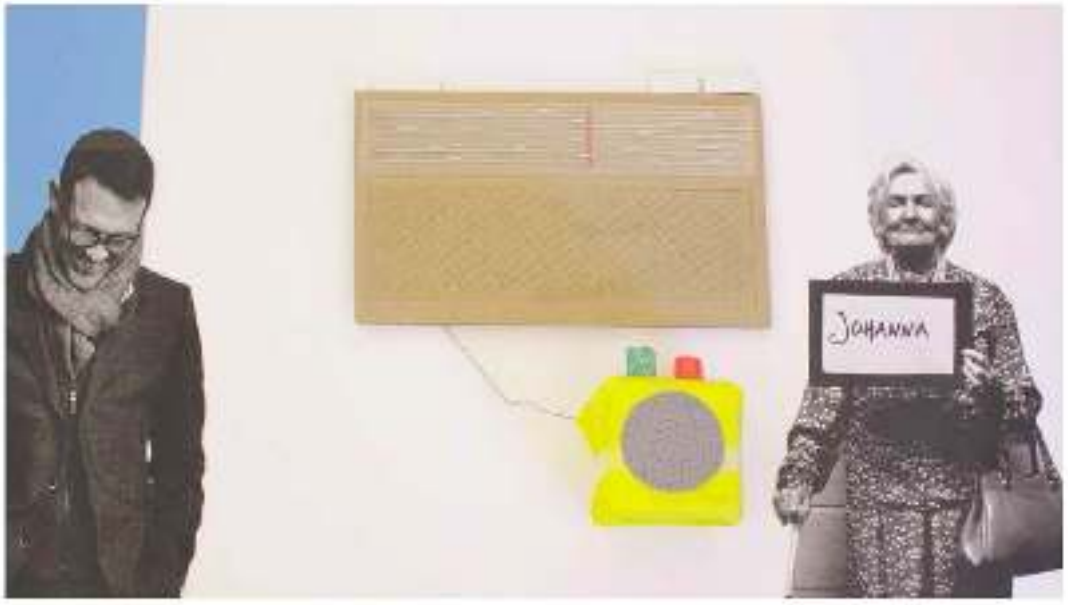
Günter

58 Jahre, Angestellter
Geschieden
Lebt allein in einer Kleinstadt (50.000 EW)
2 erwachsene Kinder, 1 Enkelkind
Günter hört gerne Musik und spielt Gitarre in einer Jazzband.
Er ist gerne in seiner Wohnung und beschäftigt sich mit seinem Computer.

Johanna

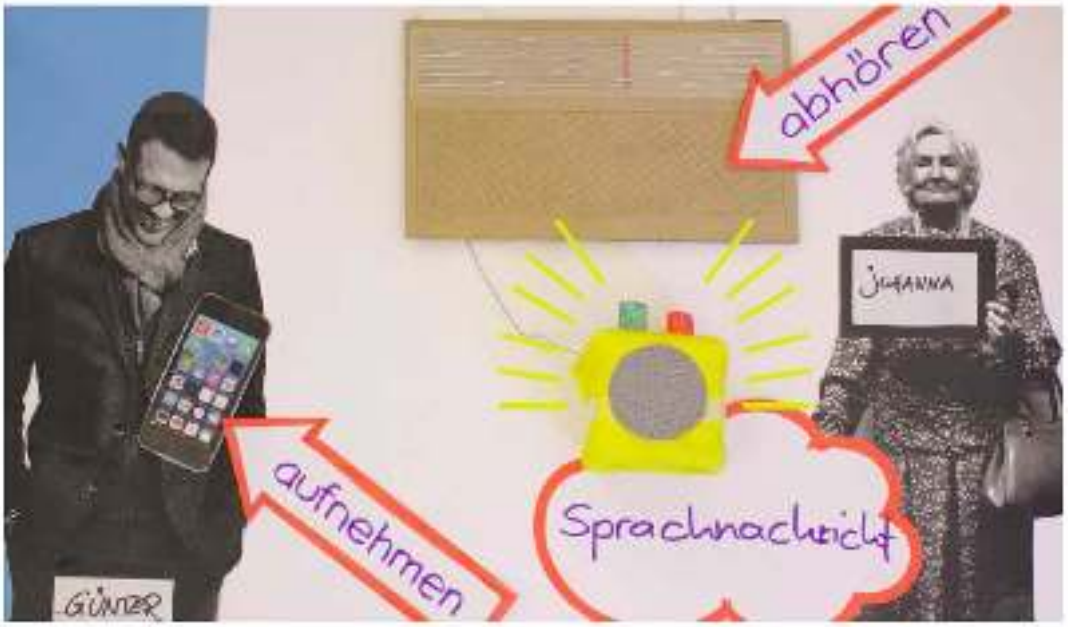
82 Jahre, Pensionistin (früher Hausfrau)
Verwitwet, keine Kinder
Ihr Neffe Günter ist ihr einziger Verwandter, er lebt 10 km entfernt.
Johanna lebt in einer Kleinstadt (5.000 EW) in einem Haus mit Garten.

So oft es geht arbeitet Johanna in ihrem kleinen Garten. Sie schaut täglich fern und hört Radio. Wöchentlich besucht sie ihren Seniorenverein, nimmt auch an dessen Ausflügen teil. Johanna hat keine technischen Kenntnisse und besitzt kein Mobiltelefon.



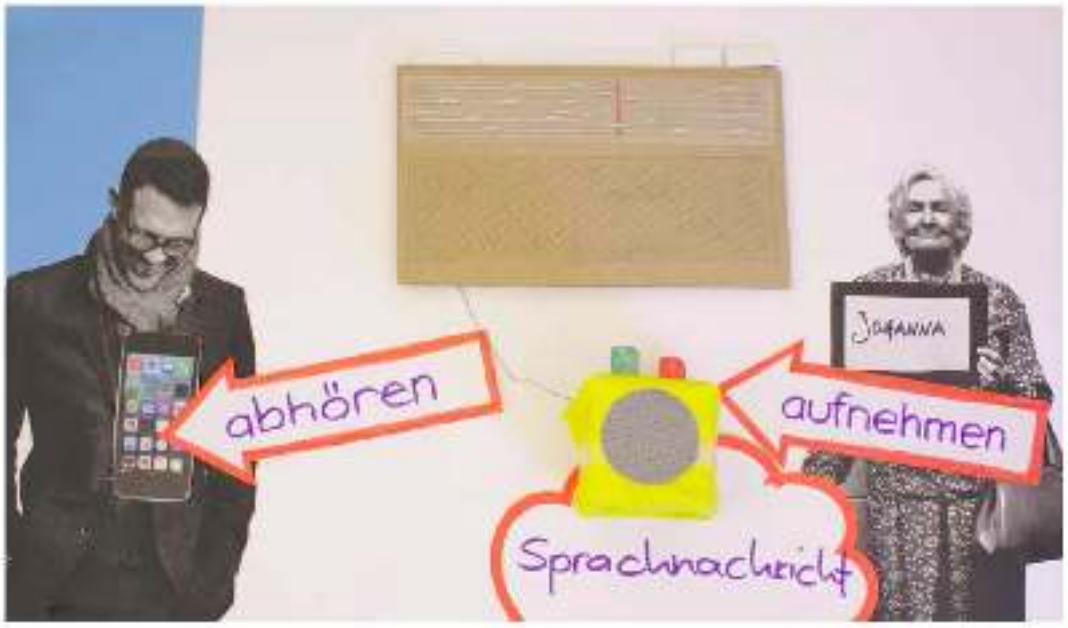
careconnect

Johannas lieb gewordenes altes Radio wird von Günter mit einem internetfähigen Adapter ergänzt.



care connect

Günter nimmt mit seinem Mobiltelefon eine Nachricht auf. Der Adapter beginnt zu leuchten. Johanna hört die Nachricht über ihr Radio ab, wann immer sie möchte.



care connect

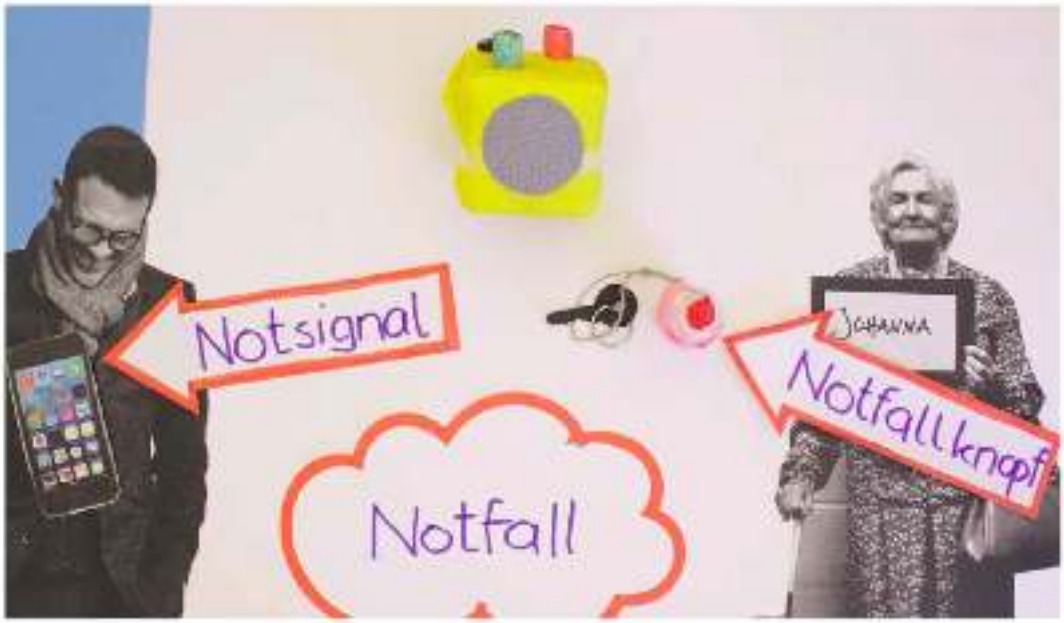
Auch Johanna kann über den Adapter Nachrichten aufnehmen, die Günter jederzeit z. B. über sein Mobiltelefon abhören kann.

care@connect

Im Notfall kann Johanna durch das Aussprechen definierter Wörter ein Notsignal auf Günters Handy oder an eine Hilfsorganisation absenden.

care@connect

Ein weiteres Modul ist ein Schlüsselanhänger mit RFIT Funktion. Der Adapter erkennt Bewegungen von Johanna, die den Schlüsselanhänger bei sich trägt.



care connect

Der Schlüsselanhänger hat auch eine Notfunktion.

care connect

Ausbaustufe des care_connects ist ein Internet-Radio, das die Eigenschaften des Adapters besitzt und zusätzliche nützliche Funktionen bietet.

carecconnect

carecconnect

carecconnect

carecconnect

carecconnect

carecconnect

Für mobile Anwendungen kann das Radio mit einem tragbaren und stoßsicher ausgeführten Tablet ergänzt werden. Die Grafik ist besonders einfach und bedienerfreundlich gestaltet.

careconnect

careconnect

careconnect

careconnect

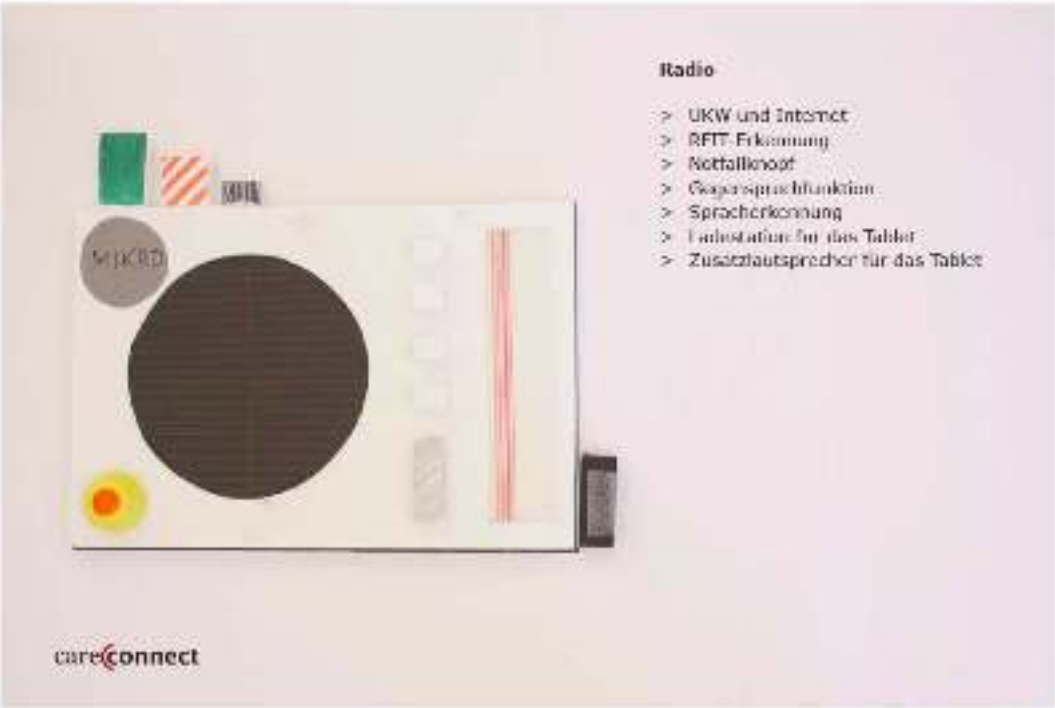
careconnect

Wie bei üblichen Tablets können die Funktionen unbegrenzt erweitert werden.

careconnect

Gerätedetails

Adapter und altes Radio
> Gegensprechfunktion mit leuchtfähigem Gehäuse
> Spracherkennung
> RFID-Erkennung
> Kompatibilität für Tonsignal mit alten Radiogeräten
careconnect


Radio
> UKW und Internet
> RFID-Erkennung
> Notfallknopf
> Gegensprechfunktion
> Spracherkennung
> Ladestation für das Tablet
> Zusatzlautsprecher für das Tablet
careconnect

Schlüsselanhänger
> Talismanfunktion
> K-11-Geber
> Notfallknopf
> optional mit Notfalldaten
> Beatmungstuch
> Notfallmedikamente
careconnect

TABLET
Tablet
> Notfallknopf
> Gegensprechfunktion
> Spracherkennung
Optionen:
> SMS
> Medien
> Spiele
> Gymnastikprogramme
> Medikamentenerinnerung
> Aufgabenbörse (zB: Hilfswerk, Omnibus, Pfarrei etc.)
> soziale Netzwerke
careconnect

carecconnect

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Concept "care-in-motion"

Care in motion

Ist ein Kommunikationssystem zwischen Familienmitgliedern, die ihre Liebsten trotz räumlicher Distanz immer gerne bei sich haben wollen.
Es ist stationär oder mobil anwendbar und lässt sich individuell und nach persönlichen Wünschen zusammenstellen. Es richtet sich im Speziellen an Personen, die ihren Alltag allein bewältigen können.

In seinen Grundfunktionen ist das System mit einem Notrufnetzwerk ausgestattet. Dieses Netzwerk ist erweiterbar. Es lässt eine geschlossene Kommunikation zwischen zwei Personen zu – Care giver/Care taker, kann aber auch auf einen erweiterten Personenkreis ausgedehnt werden – Care motion Forum.

Wie funktioniert Care in motion?

Installiert wird das System in den Wohnraum der Benutzer. Hierzu kann jede Wand der Wohnung verwendet werden. Die Grundausstattung besteht aus drei Komponenten, die je nach individuellen Wünschen erweiterbar sind:

- Care Board
- Care Cube
- Care Key

Im Care Board ist die Haupttechnik untergebracht. Hierfür ist ein Strom- und Internetanschluss notwendig. Alle anderen Komponenten werden magnetisch an beliebiger Stelle auf dem Care Board befestigt. So bald die Komponenten auf dem Care Board positioniert sind, ist der Datenaustausch wie auch die Stromversorgung aller Komponenten gewährleistet. Zusätzlich werden die mobilen Devices in ihren Boxen aufgeladen.

Die Lichteffekte des Care in motion

Optisch wird die Funktion des gesamten Systems mit Licht unterstützt. Liegen alle Devices in ihren Boxen bzw. in der Wohnung ist das Licht weiss. Fehlt ein Device, ändert sich die Lichtstimmung und der Benutzer erkennt, dass ein Gegenstand nicht im Wohnbereich liegt.

Die Lichtspiele werden erst aktiviert so bald der Bewegungsmelder angesprochen ist. All diese Informationen sind dem Care Giver in seinem System ebenso ersichtlich.

Personalisierung des Care in motion

Das Care Board bietet Platz für persönliche Erinnerungen in Form von Postkarten, Fotografien u.v.m., die die betreffende Person einfach auf dem Care Board aufbringen kann.

Wie lebt es sich mit Care in motion

Care in motion ist ein unauffälliger Begleiter bei allen Aktivitäten indoor wie auch outdoor. Es ist nicht notwendig sich neue Gewohnheiten anzueignen, die bestehenden Gewohnheiten werden in das System mit aufgenommen.

Ein direkter und indirekter wechselseitiger Kontakt ist zu jedem Zeitpunkt gewährleistet und zwar durch Licht aber auch durch akkustische Signale der einzelen Devices. Direkter Kontakt zwischen Care Giver und Care Taker ist über das Care Desk via Textnachricht oder Videostream möglich. Auch das Forum kann auf diese Weise erreicht werden.

Ein grosser Notfall Button ermöglicht durch ein geschlossenes System den direkten Kontakt zu den Einsatzkräften und informiert sofort den Care Giver.

Alle Funktionen sind outdoor über die mobilen Devices wie Care Key, Care Mobile oder Care Desk möglich. Der Erweiterung des Systems mit anderen mobile Devices sind keine Grenzen gesetzt.

ich bin Isolde und
bin Pensionistin. Mein Arzt
freut sich, denn für meine 85 Jahre
bin ich top fit. Ich sorge mich
um meinen Sohn Josef, der an
Hochblutdruck leidet. Mein
täglicher Begleiter ist mein
Dackel Tristan.

Ich bin Josef und
Straßenbahnfahrer. Mir bleiben
nur mehr einige Jahre bis zur
Pension, denn ich bin schon 60.
Mindestens 1x wöchentlich
besuche ich Mutter und kümmere
mich um wichtige Besorgungen

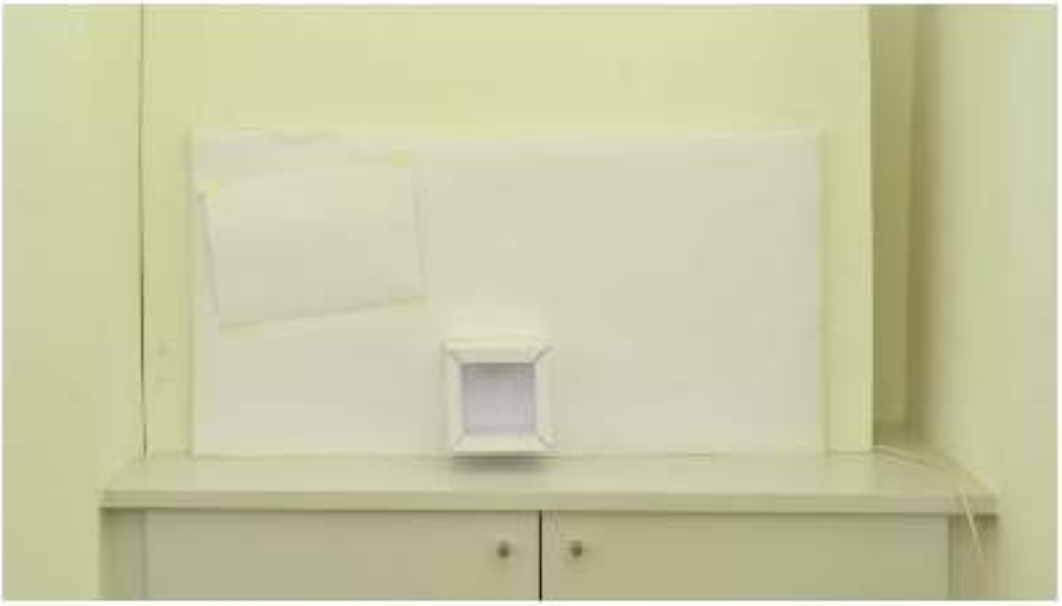
Ich bin Tristan
und liebe Isolde!

Ich bin Tristan
und liebe Isolde!

Care in motion ist einfach in der Installation.

Care Board wird an die Wand fixiert und an die Strom- und Internetverbindung angeschlossen.

Care Cubes werden frei auf dem Care Board positioniert.



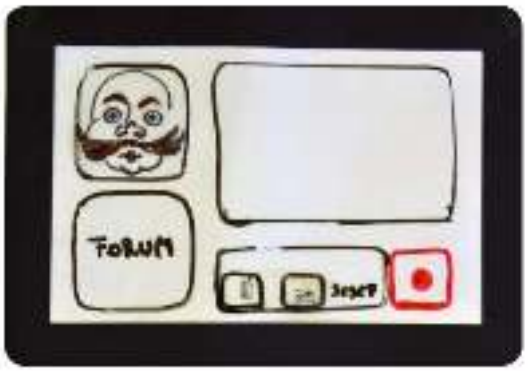
Sie können jeder Zeit wieder verschoben werden.

Die Grundausstattung ist das Care Board und der Care Key.

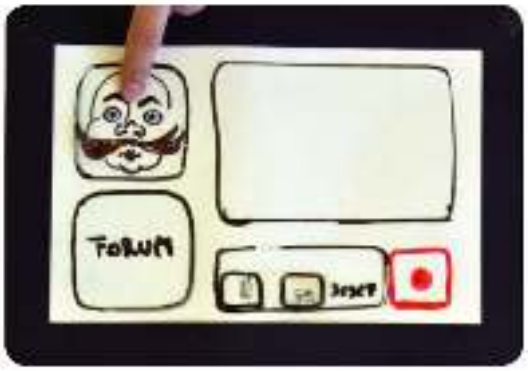
Der Care Key wird im Care Cube automatisch geladen.

Befülltes Care Board nach individuellen Wünschen.

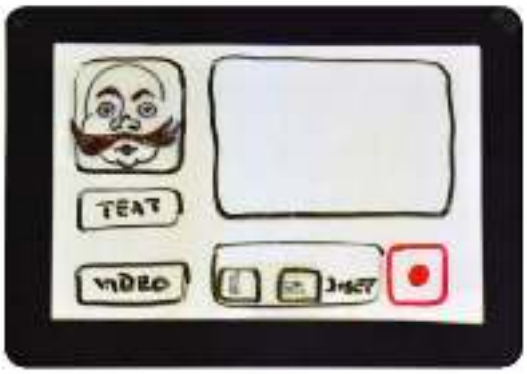
Mobiler Care Desk auf Care Board fixiert und persönlich gestaltet.



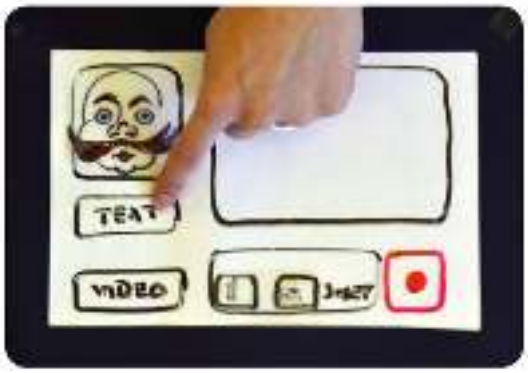
Care Desk im Startscreen.



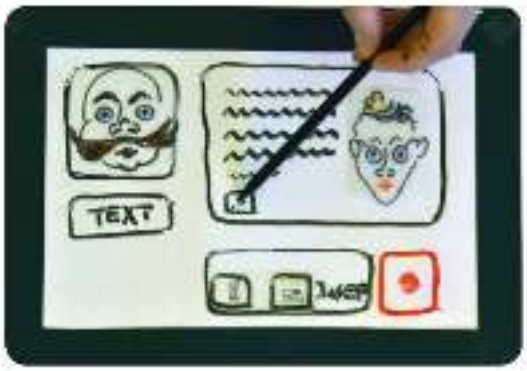
Care Desk Kontaktaufbau zum Care Giver.



Care Desk Kommunikationsauswahl



Nachricht an Care Giver.



Care Taker – Absenden der Nachricht.

Care Giver – Nachrichtenempfang auf seinem mobile Device.