

Well-being from the perspective of interior architecture: Expected experience about residing in residential care centers

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Abstract: In architectural practice, residential care centers need to comply with complex restrictions and requirements regarding objective parameters (e.g., measurements due to safety and accessibility). Paradoxically, this may hinder attention for qualitative aspects such as experience or well-being. Nonetheless, the physical environment has been shown to have the potential to increase well-being. It is therefore important for (interior) architects to gain as much insight as possible in how interior architectural design contributes to individuals' well-being. The tension between expected experience (prejudices) and actual experience of people towards residential care centers is an interesting angle to approach this complex research topic. Its study can provide opportunities to work out spatial 'solutions'.

This research is biphasic. First, communal spaces in a selection of residential care centers in the Belgian province of Limburg are documented through photographs. Next, a selection of these photographs is used as stimulus material in an explorative questionnaire. Our research results indicate that well-being can be approached by interior architectural themes and that environmental dealbreakers and must haves are similar on short- and long-term perspective.

Therefore, predicting experiences enables us to construct a positively experienced environment.

Key words: *Interior Architecture, Well-being, Residential Care Center, Experience*

1. Introduction

We are getting older, and we are not alone. In Western Europe, life expectancy has increased with more than 50% over the last decades. In Belgium, society today consists of 15% of people aged 65 years or older [23]. Prognoses for 2050 indicate that this percentage will increase with 18%, and the number of Belgians aged 80 or older is even predicted to triple [24]. In other words, Belgian society is getting submerged by the *silver generation* (i.e., people aged 65 or older), a process that has been fortified by the technological progress in healthcare, increased prosperity and a better standard of living in the post-World War II era.

Knowing that our loved elderly ones will live longer is a comforting idea: that they are getting older implies that they will stay in our own life for a longer period of time. However, this group carries their own burden: physical and mental health problems followed by an increasing need for care and attention. In the last decades, society has provided a broad variety of senior citizen housing facilities, adapted to the functional and mental status of the elderly person. One among these is the residential care center (RCC), a communal housing facility for the elderly with a joint daytime environment and private bedrooms. This particular type of housing is the architectural setting of this paper, because an interesting paradox resides in these RCCs. Theoretically, they seem to be an ideal living alternative when entering the frail stage of life, with the provision of housing and care.

In everyday reality, however, they have a negative connotation concerning subjective well-being and living enjoyment, and peoples' expectations towards residing in a RCC are rather negative. This indicates a tension both at the level of the actual architectural design and that of the expectations and perceptions of possible future residents. Our main objective, then, is to analyse the architectural reality of the RCC regarding parameters relevant for subjective well-being and to gain insight in what people specifically expect to experience when residing in RCCs, more specifically the communal spaces. We believe that by including this approach as an empathic layer next to the safety, accessibility and ergonomics layers (i.e., *objective well-being*) in the RCC design process, an (interior) architect can positively influence subjective well-being of residents.

In this paper, we start with conceptualizing the RCC (2.1). In a short review of the literature from the angle of well-being and interior architecture, we identify guidelines that were found to have a positive outcome on subjective well-being when applied appropriately. (2.2). Next, a sample of cases of RCC's in Limburg (Belgium) will be analysed based on their application of these guidelines for the creation of an empathically designed environment (3.1, study 1). In a following section, empirical data will be collected through a questionnaire to assess the expected experiences in these specific environments for a specific population (young adults; 3.2, study 2). Results from both studies will be compared. We conclude the paper with a reflection on the potential limitations, contributions and implications of our study.

2. Review of literature

2.1 Residential Care Center (RCC)

The RCC is an internationally known conception on the elderly housing market [14, 15, 21]. The general definition [9, 15] relates to the communal living situation of elderly persons confronted with somatic and/or lucidity disorders, that is characterized by the availability of personal care around the clock. Living together occurs during daytime, when people eat, relax and spend their time with co-inhabitants. Nighttime is spent in the privacy of their proper bedroom. Depending on the scale and housing philosophy of the RCC, the living communities vary in size. Looking at Belgium, the RCC currently is one of the most common housing types for elderly people who are faced with a decline in physical and/or mental abilities.

The RCC is usually built up by two separated types of wards: there usually is a residence for elderly people with somatic disorders (i.e., they have a decline in functional abilities needed to perform the daily routines like getting out of bed, bathing, getting dressed, ...) and a residence for elderly people with dementia (often combined with somatic disorders). In the RCC, people live in community within their ward.

In the RCC, the private (bed) room – which usually comprises a small bath unit [15] – is intended primarily for sleeping and bathing and is furnished with a provided bed, and can be supplemented with personal belongings (furniture and decoration). As such, this room is customizable. Spending daytime and consuming meals take place in the RCC's communal spaces. These communal spaces are the sub-architectural setting of this paper. Depending on the size and level of equipment and finances, the RCC consists of several communal spaces, such as for instance a dining room and a recreation room. These spaces are open to habitants and staff only. Most of the time, a RCC also has a cafeteria. This is a semi-public space, because non-residents are allowed to frequent it during opening times. It is a medium that allows residents and their guests to interact in a

different setting than their private bedroom.

Starting after World War Two and continuing in the first decades of the 21st century, Belgium has seen a boom in the construction of RCCs due to the ageing society and the fact that the so-called ‘baby boom generation’ is approaching the age group of ‘elderly persons’ [15]. When we take a closer look at the design process of RCCs over time, this has been dominated by several different aspects. To start, in the second part of the 20th century, the emphasis lay on the provision of as many ‘beds’ as possible in a short period of the time, to meet the acute problem of housing for the elderly. Big buildings arose, whereby fire safety and financial limits were important requirements to take into account in the design process [15]. With the rise of Universal Design (UD) research and publications from the 1960s onwards, accessibility and ergonomics became important focal points in the design process. Objective parameters considering the sizes for wheelchair accessibility and ergonomic solutions for, for instance, door handles, toilets and showers, were developed and put into practice towards the end of the 20th century. Gradually, user friendliness became important, although it needs to be remarked that the designerly implementations of these UD features in the pioneering years had a very “clinical” look. In those days, (interior) architects focused on complying with the requirements relating to safety, usability and accessibility [15]. As such, objective well-being (i.e., the presence of safe, accessible and ergonomic features) for the user was accomplished, but meanwhile, creative liberty and freedom were balanced out. From a user experience perspective, this ergonomic and adequate architecture felt rather ‘hard’ and ‘cold’ [24]. The functional environment confronted residents continuously with their physical disabilities and it became a psychological downer. The RCC was labeled as an oiled ‘living machine’, that often caused stress and negative influences on the health status of elderly persons [26].

Throughout the last decades of the 20th century, attention shifted from user friendliness to user enjoyment, along with the wave of international research attention for subjective well-being and empathic design. Examples of such actions in RCCs are the implementation of residents’ council, architectural changes towards homelike interiors, etc. Creativeness returned to design offices, and more effort was put in the look and feel of ergonomic elements. Today, we believe the (interior) architect can play a big role in the subjective well-being factor of the RCC, when a social layer in the design process is added. The empathic character of the designed environment can perform a psychological supportive task contributing not only to an all-round feeling of contentment, but also to a better experience of well-being [22, 24, 32].

2.2 Subjective well-being

Today, a considerable amount of research is available that focuses on subjective well-being [10] and actual experience in healthcare [e.g. 14, 27, 28, 30, 31]. Subjective well-being is a comprehensive concept, but in this context specifically refers to a general, positive state of mind, which is linked to the architectural space one is staying in. Some research supports the theory that architectural elements have a positive outcome on subjective well-being. In other words, more attention is being paid to the consequences of design choices made by (interior) architects designing healthcare facilities, with the aim of creating high-quality empathic designed environments. The architectural space together with human existence forms a holistic entity wherein human behaviour can be described as the mix of activity and social integration [1]. Positive interaction between the architectural space and the elderly person itself can therefore supply meaning in the aging process, which is usually dominated by negative feelings due to the loss of physical ability and mental lucidity [3]. In what follows, we give an

overview of seven guidelines relating to subjective well-being drawn from a review of literature. We apply these issues to well-being for the elderly.

2.2.1 Physical and psychological security and accessibility

For the elderly, it is important to find safety in their environment. This not only means the adequate physical adaptations concerning accessibility, user friendliness and fall prevention, but also experiencing an environment in which they feel secure and sheltered, and which meets their social and psychological needs [9]. In order to achieve a state of well-being, the personality of the elderly person must interact with and understand the situational properties of the environment in a positive way. When elderly people lose the ability to understand and comprehend their surroundings, feelings of unsafety may occur, which can lead to augmented levels of stress and fear, and eventually depression [9]. In their turn, measures of psychological depression are highly correlated with a decrease in life satisfaction and well-being in the environment [13].

2.2.2 Social interaction

Living in a RCC implies living together with others, in a community. Therefore social interaction is in one way or another a typical characteristic of RCCs. Elderly people living at home often experience the risk of becoming lonely when they face health problems preventing them from going outdoors. Their action radius becomes rather small, and this often has implications for their social network. This problem does not occur so frequently when living in a RCC. There, it is expected that residents fulfil each others' social needs [32]. In practice however, we must remark that the presence of others does not prevent people from getting lonely, introverted or feeling socially excluded. Therefore, it can be an incentive for designers to fit the designed environment with several social features, in such a way that residents can control the level of interaction they feel they need to experience at a particular moment in time with others [26].

2.2.3 Controllability of space

People tend to have a natural urge to be able to intervene in the way a space is built up, equipped, used and decorated. This tendency is closely related to the need of self-efficacy [27]. Within a RCC, residents are spending a great deal of their days in the communal spaces. In Belgian RCCs, the communal spaces are generally not open for personal items (furniture, decoration), which can contribute to an impersonal feeling. According to Percival [20], the exertion of personal control over the physical and esthetic situation of the communal space is particularly important for the elderly in the process of accepting the RCC as their new 'home'. Next to personalization in an environment, there is the danger of the emerging of small personal annoyances, like for instance a TV playing too loudly or the temperature being too hot/cold. Such irritations are a danger to the general feeling of well-being in the environment and can have a negative outcome causing stress. According to Ulrich [26], residents should be able to work with the environment and have minor usage control.

2.2.4 Positive distraction

According to environmental psychologists, positive distractions in the environment are as important as difficult to tune to the personal wishes and communal needs of the group of residents. A bare environment will be not functional because there is no possibility for people using the space to interact with it [16]. The lack of external positive stimulation produces boredom, causing people to focus more on their inner thoughts, or in some cases their own worries or problems [28]. Environmental stimuli can prevent boredom and arouse the

mind of elderly people, but an overkill of distraction on the other hand can result in a negative outcome, such as feelings of discomfort or failure in comprehending the environment. As such, they can become a pitfall for stress and a depressive state of mind. Designers thus need to find a balance between creating a stimulating environment and an over-stimulating environment, which people can experience as rather discomforting [26].

2.2.5 Homelike environment

The aspect of 'home' is among the first expressions of architecture a person experiences, bearing a heavy loaded significance in the field of environmental psychology (behaviour), philosophy (existential state) and architecture (spatial characteristics). 'Home' can be conceived as a place for physical, psychological and emotional security and a symbol of self-identity and self-affirmation.[11]. Asking persons to give up their home and consequently their own definition of 'home' in exchange for the communal home, is a difficult process [28]. The psychological creating of the new 'home' can be accelerated when people are confronted with a homelike-décor in the new environment [7, 8, 21, 28]. "Homelikeliness" (feeling at home) also holds therapeutic potential for the elderly, since place identity is crucial for self-identity [19]. A homelike environment, and therefore feeling at home, has been proven to strengthen elderly peoples' resources against depression and cognitive disabilities since it translates itself into a positive mental attitude [11]. It can encourage independence, provide safety, emotional shelter and support social belonging.

In this respect, Peace and Holland [18] however point out that people using communal spaces in RCCs usually do not interact; they spend their time reading or watching TV alongside each other. Therefore, Hauge and Heggen [12] conclude that the home-like décor in the communal spaces of RCCs can also work as a decoy.

2.2.6 Accessibility to nature

Nature has been proven to have a calming and psychological 'healing' effect on people [17]. It symbolizes (the circle of) life, freedom, trust and safety [29]. Continuous visual and physical contact with nature and accessibility to nature stimulates the senses and works positively on the mood [25, 31]. Translated into (interior) architectural terms, this implies that they should be cautious in providing entrances to outdoor facilities that are present at RCCs, but that they should also pay particular attention to the issue of entrance of daylight and sunlight there [31].

With regards to this issue, we must remark that elderly people not only need to be able to look out onto calm greenery scenes, but can also benefit by the lookout onto city-life, meaning an environment with people passing by and where they are able to experience the typical activity of the city, and society in general [2, 9].

2.2.7 Esthetic quality

There has been a lot of research on the issue of esthetics linked to well-being. Weenig [32] for instance demonstrated that esthetic and physical characteristics of a space are directly related to the experience of well-being. Bergland and Krikevold [5] found that an attractive, bright and tidy environment works well in relation to well-being. Brawley [6] stated that the placement of artworks can function as positive distraction, ruling out negative feelings as boredom. Extra attention must be put to the choice of artworks. These objects can have either positive or negative outcomes on well-being depending on the psychological image which they evoke. [26] Abstract art or art that refers to nature for instance seem to propel different connotations and seem to have different outcomes on well-being [27].

3. Empirical research

After the theoretical context, we continue with the empirical research, in which we want to gain insight in the architectural reality of RCCs concerning well-being, and the expected experience people have towards residing in RCCs. In a first study, we want to assess how well the guidelines from the literature have actually been implemented in existing RCCs by looking at a selection of three RCCs in the Belgian province of Limburg. We focus here on their communal spaces. Through on-site visits and systematically documenting the spaces through photographs, we attempt to evaluate their theoretical well-being performance, using the literature guidelines as a checklist. A selection of these photographs is then used as stimuli for a second study in which a questionnaire was presented to young adults in order to identify as many parameters as possible that seem to influence the expected well-being in RCCs (study 2). This study forms the first step in a larger project looking at the changing expectations and perceptions about living in an RCC during the course of peoples' lives.

3.1 Study 1: case study research

How well do existing RCCs in Belgium perform in implementing the relevant subjective well-being guidelines? In a first step of this research project, we selected three RCCs that are located in the Belgian province of Limburg. The selection had the purpose of comprising the existing broad variety of RCCs in the area from the viewpoint of urban position, the founding organization, size and scale, and recreational options. We selected Case 1 in Bilzen, Case 2 in Munsterbilzen and Case 3 in Hasselt. General features of the different RCCs and their performance based on the parameters that were retrieved from literature are listed in Table 1. The selected RCCs were all visited during the February 2013. Visits took place just before or just after noon. The full inspection of the facilities took approximately 1 to 1,5 hours and was directed by the RCC manager. Communal spaces were extensively photographed from a top-down approach: a researcher photographed each of the communal spaces from different angles in order to be able to 'capture' the entire room in one image as much as possible. The communal zones were photographed empty (i.e., without residents being present) and the collected photographic material was classified according to the different communal spaces present in the facilities. Seven types of communal spaces were found in each RCC: a corridor/circulation area, a dining room, a recreation room, a TV room, a cafeteria, an outdoor space, and an entrance area. In addition, case 2 and 3 had a chapel, and case 3 also had a meditation room.

Table 1. Features of the three cases & evaluation based on well-being items from literature

	Case 1	Case 2	Case 3
General features			
Location	Bilzen, small town	Munsterbilzen, village	Hasselt, provincial town
Newly built/historic setting	newly built	historic monastery	newly built
Urban/rural position	urban	rural	urban
	<i>cultural zone</i>	<i>youth facilities zone</i>	<i>industrial zone</i>
Well-being guidelines literature			
Physical and psychological security and accessibility	very good	very good	good
Social interaction	good	very good	good
Controllability of space	poor	good	poor
Positive distraction	good	poor	neutral

Homelike environment	good	good	poor
Accessibility to nature	very good	very good	good
Esthetic quality	good	good	poor

Evaluation of the three cases on the base of the items found in literature was performed by the first author, a spatial expert. The first author specifically looked at implementation, presence of these items, looking in global at the total of the communal spaces per case. Eventually, a qualitative score was given for every item, ranging from ‘very poor’ to ‘very good’. Looking at the performance of the cases regarding the guidelines, table 1 demonstrates that case one and two have a positive balance. Case three is rather average. In every case, physical and psychological security and accessibility, social interaction and accessibility to nature have the best rating among the different parameters. All three cases have put effort in creating a low threshold environment. The institutions are all adapted to physical disorders without stigmatizing, and they all worked on psychological security, creating a sheltered environment. The aspect of social interaction is accomplished due to the many types of frequently used communal spaces. Thereby, case one’s location and inviting character and case two’s implantation between youth facilities (school, youth movements’ play area) and the effort of convincing local guilds to do activities with the residents in the RCC, contribute to the social atmosphere and activity in and around the RCC. All three cases also have green outdoor places incorporated. Case one is currently constructing a landscape garden and patio, case two benefits from the beautifully layed out monastery garden, and case three created a number of green patiogardens. In all three facilities, the outdoor spaces are used extensively.

The item receiving a lower score throughout the cases, was controllability of space. At case two, movable furniture was present in some communal spaces, for the purpose of dividing the room or increasing privacy whenever desired. Also, residents could participate in the arrangement and equipment of the rooms. Therefore, this case received the score ‘good’. Positive distraction and a homelike environment were pursued in all three cases, with varying results, also depending on the different type of spaces. Esthetics qualities scored ‘good’ in case one and two. Case three however has a mere clinical look, except for the small living areas, in which decorating items and homelike furniture increase the esthetic quality. Therefore, this case scored ‘poor’ on this issue. The evaluation of the sample of existing RCCs shows that several guidelines are in fact implemented, but that does not mean they are experienced in a positive way by people. Next, we will continue with study 2, in which we want to gain insight in the expected experience of people concerning well-being in a RCC.

3.2 Study 2: questionnaire asking expected experience towards residing in RCCs

Through this study we want to find out which environmental aspects are expected to impact on subjective well-being in RCCs. Subjective well-being is built up by three sequential stages (expectance, experience, evaluation) [10], of which the stages *experience* and *evaluation* have already been covered in internationally performed research [e.g. 5]. The stage *expectations* has not, notwithstanding that expectations are an interesting angle to address the issue. Expectations can be organized in two categories: prejudices and biases, and positive expectations (nourished by hopes). Both provide useful information for (interior) architects. Positive expectations towards residing in a specific environment can provide insight in what kind of environmental parameters are interpreted in a positive way. When the environment is able to meet these expectations, a positive balance between expectance and experience is created, and this can result in a state of satisfaction or

psychological well-being in that environment. Prejudices towards residing in a specific environment provide opportunities to translate them into actual ‘problems’ for which designers can work out spatial ‘solutions’. This study is part of a larger research project in which different generations (from young adults to elderly people 65+) are asked about their expected experiences towards residing in a RCC to try to understand the personal RCC perspective throughout the temporal stages of human existence. Here, we focus on the target group of young adults between the age of 20 and 30.

3.2.1 Method

This explorative study is performed by a questionnaire developed based on the guidelines found in literature and with a selection of the photos from study 1: respondents received three pictures for the different types of communal spaces, i.e. one for each RCC in study 1, and completed the questionnaire for each picture. The questionnaire consists of three types of questions. First, we asked the respondents to respond on a seven point scale to contrasting spatial concepts related to well-being. Second, three questions on a seven point scale concerning the possibility of spending time, feeling at ease and receiving visitors in the room were included, and finally, three open questions concerning the most annoying and the most attractive interior architectural item in the room, and what could be changed to improve well-being (missing element) were added. In that way, qualitative and quantitative data could be retrieved. In the current paper, however, we will only elaborate on the qualitative data.

The questionnaire was filled out two times per photo, from the perspective of collecting expected experiences from the double viewpoint of (i) their future self as a resident in a RCC (scenario 1: long-term), and (ii) an elderly loved one (e.g., such as a grandparent) that currently resides in a RCC (scenario 2: short-term). In this way, we believe to be able to generate instinctively rich data with regards to the participants’ spatial experiences and, in addition, we hope to learn more about the potential different layers that exist in experiences.

This study was performed at the end of February 2013 through student data collection on 60 respondents between the age of 20 and 30, of which 50% was female. 30 respondents received pictures of the TV room, dining room and corridor, the other 30 respondents received photos of the cafeteria, recreation room and corridor. The corridor was evaluated by all of the 60 respondents because of its importance: it is used constantly and is the first (interior) architectural item a resident experiences when leaving their private room.

In sum, each respondent was given nine photos, blocked per type of communal space (e.g., three TV rooms, three dining rooms and three corridors), each accompanied by the same questionnaire, that was to be filled in from two distinct perspectives (future self and elderly loved one).

3.2.2 Results

In order to process the data, we took an explorative approach through the following three approaches of looking for (i) overall differences in expected experience between the two scenarios, (ii) the interior architectural ‘dealbreakers’ in the different types of communal spaces per scenario, and (iii) the interior architectural ‘must haves’ in the different types of communal spaces per scenario. This analysis is based solely on the qualitative data from the questionnaire (i.e., the responses to the open-ended questions). With a bottom-up approach, the spatial terms given to describe the most annoying, the most attractive and the missing elements in the rooms, were clustered to form categories around main interior architectural themes, that were applicable

for every type of communal space. This resulted in six clusters in which 97% of the answers could be subdivided. The remaining 3% consisted of answers not relevant to the research (e.g. *I am missing a beautiful nurse in this room*), or environmental items that were very isolated and not sufficiently representative to form an additional cluster. The six retrieved clusters are: (i) **Atmosphere** (*descriptive terms of the way the room is perceived, e.g., 'bleak', 'cosy',...*), (ii) **Arrangement** (*spatial reality, use of space, organization, social possibilities*), (iii) **Light&sight** (*admission of daylight, view on and access to outdoors, artificial lighting*), (iv) **User friendliness** (*adaptiveness to the needs of elderly persons*), (v) **Decorational items** (*colors, textures, decorative items, adornments, plants&flowers, ...*), (vi) **Furniture** (*types, quantity, quality, styles of furniture*)

Comparing these composed clusters to the items that were found in literature, indicates that the items from literature could all be included in or compared to at least one of the clusters, except for the item 'controllability of space'. Vice versa, the composed cluster furniture is not explicitly found in literature.

In the next step, we have ranked the clusters in the order of importance for each open-ended question per type of communal space, so across the different RCCs, by calculating the number of times items in this cluster were mentioned for the three photos. In table 2, an overview of the results is given per type of communal space in every scenario. The top three ranking clusters are displayed alongside the percentages of presence these clusters had in the respective answers given by young adults on the questions (i) most annoying, (ii) missing and (iii) most attractive environmental element of the room.

Table 2. Overview of results, top three ranking of clusters with percentages for the long-term (scenario 1) and short-term (scenario 2) version.

SCENARIO 1										
	TV room		Recreation room		Dining room		Cafeteria		Corridor	
Annoying	decoration	25,6	furniture	25,9	arrangement	37,8	arrangement	26,4	decoration	39
	furniture	24,3	arrangement	25,4	light&sight	22,4	atmosphere	19,1	arrangement	19,5
	arrangement	22,9	atmosphere	19,1	decoration	19	furniture	13,6	atmosphere	17,7
Missing	furniture	38,4	decoration	33,9	decoration	26,9	decoration	29,2	furniture	27,6
	light&sight	16,2	atmosphere	31,9	furniture	23,9	atmosphere	25,1	decoration	25,1
	decoration	16,2	furniture	16,5	light&sight	19,6	furniture	18,3	atmosphere	16,9
Attractive	decoration	24,7	light&sight	30,9	decoration	35,4	light&sight	26,1	decoration	38,1
	light&sight	24,6	decoration	28,6	furniture	16,8	decoration	24,3	user friendliness	19,9
	furniture	24,1	furniture	19,7	light&sight	15	furniture	16,8	light&sight	14,6

SCENARIO 2										
	TV room		Recreation room		Dining room		Cafeteria		Corridor	
Annoying	arrangement	22,2	furniture	25,8	decoration	25,2	arrangement	22,9	decoration	39,7
	decoration	17,8	arrangement	25	arrangement	22,8	atmosphere	21,2	atmosphere	23,1
	furniture	17,3	atmosphere	21,1	light&sight	20	decoration	17,3	arrangement	19,5
Missing	furniture	27,1	atmosphere	33,6	decoration	29	decoration	33,8	decoration	31,8
	decoration	22	decoration	27,9	atmosphere	22,9	atmosphere	15,8	furniture	23,1
	atmosphere	19,8	furniture	16,5	furniture	19,7	furniture	14,5	atmosphere	17
Attractive	light&sight	32,2	light&sight	39,4	decoration	32	light&sight	28,1	decoration	27,3
	furniture	21,3	decoration	18,5	light&sight	19	decoration	22,1	user friendliness	18,7
	decoration	13,6	furniture	16,2	furniture	14,4	arrangement	14,4	light&sight	16,2

The global comparison between the scenarios from study 2 shows no consistent difference. The cafeteria was experienced most similarly in both scenarios in the three categories (annoying, missing and most attractive element). The TV room was experienced most differently between the two scenarios, both in terms of rankings and percentages, but the differences were relatively small. This suggests that young adults do not see much diversity in experience between an elderly person now, and themselves as elderly persons within more or less

50 years. Zooming in on the environmental *dealbreakers* (*annoying element*), the *arrangement* cluster is experienced as most annoying, which is illustrated by its presence in the top three in all of the different types of rooms. The cluster is ranked equally in both scenarios, namely first in two types of communal spaces, second in two types, and third in one type. More specifically, the asocial organization of furniture, and unbalanced use of space are key dealbreakers similar in both scenarios. Top three ranking is completed by mainly furniture and decoration in scenario one, and decoration and atmosphere in scenario two, showing a small differentiation between the scenarios. Zooming in on the environmental *must haves* (*missing element*), more variety can be noticed between the scenarios. In the long-term scenario, the top three consists of the clusters decoration and furniture in all five types of spaces, supplemented by atmosphere (in 3 types) and light & sight. In the short-term scenario, the top three consists in all types of spaces of the clusters decoration, atmosphere and furniture, of which decoration is ranked first in three types of spaces, and atmosphere and furniture in the remaining two types of spaces. Decoration can therefore be seen as the key must have for each communal space in both scenarios. More specifically the use of colors, presence of paintings, photos, ornamentation and natural elements are key must haves. For scenario one, additional must haves are the presence of different types of seating furniture. For scenario two a homelike, authentic, calm atmosphere is the additional must have element.

Additionally looking at the clusters that are already experienced in a positive way (*attractive element*) per scenario, light&sight can be found in the top three of each type of communal space in both the scenarios.

4. Discussion

The data from study 1 suggest that physical and psychological security and accessibility, social interaction and accessibility to nature are elements given attention to in the design process of RCCs. In order to compare these parameters to data from study 2, we will try to find a match in the answers given to the question concerning most attractive element, since we want to find out if the RCC are also expected to be experienced in a positive way. The category of most attractive elements in Table 2 demonstrates that light&sight, more specifically admissions of daylight and view on the outdoors (comparable to the item of accessibility to nature), is indeed very much appreciated throughout the different types of rooms and throughout the two scenarios. Admission of daylight, view on the outdoors are items that must also be taken into account when designing a communal space from the perspective of subjective well-being. The other two items from literature that scored highly in study 1, were not interpreted as an attractive element in study 2.

Controllability of space has a poor score in study 1. In study 2, no answers occurred concerning this item, concluding that it does not seem to be an issue influencing well-being according to young adults.

We also notice that there is no remarkable difference in expected experience from a double perspective. Next to some minor differences, the ranking is merely parallel in both the scenarios. This means that even though young adults differentiated their answers for both scenarios, their expected experience seems to be primarily equal. The main environmental dealbreakers and must haves are also quite similar and ranked equally in both scenarios, respectively to be found in the cluster arrangement (dealbreaker), and decoration (must have). Combining the parameters found in literature and the qualitative data from the questionnaire research, we can now add another parameter to the list of parameters believed to influence well-being, namely ‘furniture’.

Another interesting angle, is the cluster ‘user friendliness’. Analyses of the data showed no explicit difference in ranking of this cluster between the scenarios, even though this was hypothesized to show significant differences throughout the two scenarios, regarding the fact that in short term thinking (scenario two), ergonomics seem to be more important due to the fact that the young adult is looking from the perspective of an elderly loved one, who currently could be dealing with physical disorders. In long term thinking (scenario one) physical disorders might disappear in the background, due to the fact that young adults are normally not yet confronted with those issues today. Note that ‘user friendliness’ refers to the cluster formed in study 3.2.

Reflecting on the outcome as an (interior) architect, one can infer that the guidelines found in literature can indeed be used in the design process in order to develop alternative and realistic empathic scenarios, but only when clarified and purified. This can be done by translating and describing the parameters in architectural jargon, e.g. “social interaction” could be translated as “formation of circular groups of furniture”. This process produces valuable, implementable information for (interior) architects.

5. Conclusion

Based on the comparison between the theoretical and empirical research, we can conclude that several items from the literature on subjective well-being are imbedded in the actual architectural reality of the RCC, but are not always expected to be experienced in a positive way. The list of parameters can be adapted by adding another cluster, namely ‘furniture’, and perhaps by critically reviewing the parameter ‘controlability of space’. In further research, we can elaborate more on the comparison of the two studies, and perform research on the importance of translation of guidelines into architectural jargon with the aim of their implementation, necessary for an (interior) architect.

Looking at the scenarios, there is no remarkable difference in expected experience from a double perspective, indicating that for young adults in this context, short- and long term thinking are quite similar. Note that this research is performed on young adults, between the age of 20 and 30. Their young age might hinder them from focussing on scenario one, in which they have to put themselves 50 years ahead. It might not be easy to incorporate possible physical or lucidity disorders throughout the answering of the questionnaire. Also, the sample size (60 respondents for the corridor and 30 for the other four types of spaces) is rather limited. Enlarging the number of respondents can be useful for further research.

For this paper, the authors only focused on the qualitative findings resulting from their questionnaire study, therefore more research can be performed using the quantitative data. Also, in a next stage, the practical, architectural input from an interior architect’ perspective will be elaborated. Clearly, more research will be needed to fully grasp the issue of subjective well-being from an interior architectural viewpoint.

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