

Happiness in place and space: Exploring the contribution of architecture and interior architecture to happiness

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Abstract Do architecture and interior architecture contribute to the happiness of people? Do these design disciplines have a role to play in enhancing possibilities for people to work on their happiness? To answer these questions, the first section of this paper discusses different factors that contribute to happiness: genetics, life circumstantial factors and intentional activities. Next, these factors are refined specifically from the viewpoint of architecture and interior architecture, whereby it is demonstrated how these disciplines can be considered as a life circumstantial factor that contributes to happiness. In the second section, a selection of techniques for exploring happiness and gaining insight in different factors contributing to happiness are discussed. Here, the authors discuss the set-up and use of a 'Happiness Circle', an exploratory tool which they developed in order to gain insight in the specific contribution that architecture and interior architecture can have regarding happiness. The results of an exploratory study wherein 212 research participants were involved demonstrate that architecture and interior architecture have a role to play in determining people's happiness, which opens various promising opportunities for future design projects.

Keywords *Happiness, Contribution of design, Happiness circle, Architecture, Interior architecture*

Introduction

'Happiness' or 'well-being' is one of the major, if not the ultimate goal, for every human being. Studying happiness is very important, relevant and timely because of several reasons. Firstly, there seems to be a societal need to focus on the well-being and happiness of people. In various industrial democracies, large groups of people continuously seem to have (had) the possibilities to fulfil their material needs and wants, and they start longing for other issues. Hence the growing interest of people to pay the necessary time, effort and attention to the fulfilment of immaterial aspects in life, their reappraisal of the search for and fulfilment of personal values, a good work-life balance, a healthy life etcetera. However, although people have the possibilities and the willingness to work on their well-being and happiness, research (Easterlin, 1974 ; Veenhoven, 1993) learns that measures of average happiness result in rather stationary data, in spite of people's increased possibilities. In academic literature, this phenomenon is known as the 'Easterlin Paradox' (Di Tella & MacCulloch, 2008). Secondly, from an economic point-of-view, paying attention to happiness seems highly relevant. Happy people seem to be successful in many domains of life, and these successes are at least in part due to their happiness. Happy people are more social, altruistic, and active, they like themselves more as well as others, they have healthy bodies and immune systems, and better conflict resolution skills. In addition, happiness seems to promote people's

capacity for constructive and creative thinking (Lyubomirsky et al., 2005b). These are all important issues and qualities of people that our industries and economies need today to face all kinds of challenges that lie ahead of us all. Thirdly, taking into account these perspectives, happiness has also become an issue on the political agenda. In 2011, the General Assembly of the United Nations accepted a resolution wherein they appealed to UN member states to undertake steps to give more attention to the pursuit of happiness of their citizens when determining how to achieve and measure social and economic development in their country (United Nations, 2011). In this respect, Bhutan is often a reference country: their 'Gross National Happiness Index' states that sustainable development should take a holistic view towards progress, and should give equal importance to non-economic aspects of well-being and happiness. In Bhutan, one wants to stimulate the set-up of initiatives that aim to increase the percentage of happy people and decrease the unsatisfactory conditions of unhappy people. Recently, in 2013, UN Secretary-General Ban Ki-moon pointed again to the importance of attention for people's well-being and happiness. In his Note to the General Assembly (2013, p. 3) he indicated that '*the creation of an enabling environment for improving people's well-being is a development goal in itself*'. This paper aims to propose a first answer to his call, as it aims to reflect on the concrete contribution that architecture and interior architecture can have in designing 'enabling

environments' wherein people can engage in meaningful activities that contribute to their happiness.

The first section of the paper elaborates about happiness and its determinants, and the potential that architecture and interior architecture can have in this respect. In the second section, a selection of techniques for exploring happiness and for gaining insight in factors contributing to happiness are discussed. Here, the results of a first exploratory study are reviewed. We examine the development and results of the use of a 'Happiness Circle', an instrument which was used to gain insight in the (specific) contribution that architecture and interior architecture have regarding happiness.

Happiness and design

As discussed in the introduction, the changing societal and material conditions seem to be an important breeding ground to the growing attention for research on happiness, also in design sciences. To date, researchers from diverse disciplines ranging from philosophy, psychology, economics and neurosciences have tried to point to the essence of well-being and happiness. In addition, the last few years, different researchers from various design disciplines begun to investigate whether their discipline can contribute to the happiness of people – and if so, what this contribution can look like or how it can be set up or produced. However, to date, there is no consensus on the conceptualization of well-being and happiness (Lyubomirsky, 2007 ; Sheldon & Lyubomirsky, 2007), not in disciplines other than design who focus on well-being and happiness (Lee et al., 2011 ; Desmet & Pohlmeier, 2013), nor in design disciplines itself that focus on this topic (Authors, 2014). As a consequence, researchers in academia often use the terms of '(subjective) well-being' and 'happiness' interchangeably (Lyubomirsky, 2007). In this paper, we follow suit.

Etymologically, "well-being" is derived from the Latin verb "velle", meaning to wish, will or literally, "to be" "well". As was mentioned earlier, no universal or specific definition can be given (Lee et al., 2011). However, most researchers agree that the concept has distinctive components: an affective part that has its evaluation based on emotions and feelings, a cognitive part that relies on memories, stored information and barometers based on expectations upon life quality and a contextual part, that relates to the context proper to all individuals (Galinha & Pais-Ribeiro, 2011; Desmet and Pohlmeier, 2013).

Determining happiness: genetics, life circumstances and intentional activities

Although there is no common shared terminology relating to happiness, various researchers share the viewpoint that happiness has an objective and a subjective component (Veenhoven et al., 2014 ; Authors, 2014). In addition, different researchers seem to agree that happiness is determined for a large part by a the presence of a predefined genetic happiness set-point, which contributes to happiness for 50%, life circumstances (10%) and intentional activities (40%)

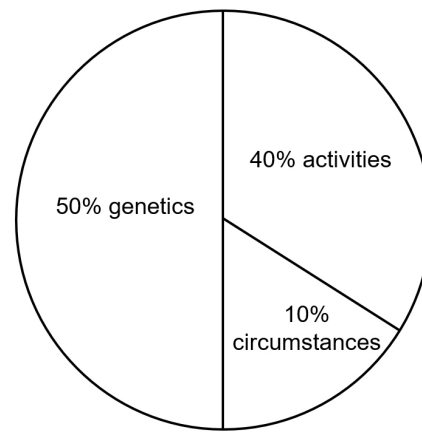


Figure 1. What determines happiness?
Source: Lyubomirsky et al., 2005

(Lyubomirsky et al., 2005a ; Lyubomirsky, 2007) (see Figure 1).

Regarding the genetic set-point of happiness, studies have demonstrated that this factor is stable over time and mostly immune to influence (Lykken & Tellegen, 1996; Tellegen et al., 1988).

Therefore, in what follows, the authors elaborate about 'life circumstances' and 'intentional activities', and indicate how, in their view, the subjective and objective approach towards happiness can be integrated herein.

Life circumstances

This factor relates to happiness-relevant circumstantial factors that occur in the course of a person's life and that influence happiness. Life circumstances refer to the national, geographical and cultural region where a person is living, as well as demographic variables such as gender or age. Also issues such as occupational status, income, job security, health status at a particular moment in life, religious affiliation and marital status form part of this happiness-determining factor (Lyubomirsky et al., 2005a).

Research by Diener et al. (1999) has indicated that these variables contribute to happiness, but only to a relatively small extent, as was demonstrated in Figure 1. This seems surprising and even stands out against most people's intuition, but research has learned that the relative small effect of life circumstantial factors can be attributed for a large part to hedonic adaptation (that is, people experience a temporary boost in happiness due to circumstantial factors, but this boost often does not last long because people tend to adapt to changing circumstances rather rapidly) (Lucas, 2007).

Life circumstances concern factors that cannot (easily) be changed. Many of these circumstantial factors relate to issues that help to answer the question *what people have to face* in their lives. Many of these factors can be objectively articulated in a particular way: people *have* a religion affiliation at a particular

time in their lives or they don't, people *have* a particular occupational and marital status at a particular time in their lives, etc. As research has demonstrated, these life circumstances influence happiness, and thus can be considered as 'mediators' for human happiness.

However in the authors' view, life circumstances or 'mediators' cannot easily or solely make people happy. In addition, there are also factors contributing to happiness for which it is not evident to pinpoint exactly whether they concern a 'mediator' or an 'activity' that potentially contributes to happiness; in our view, it depends on the particular lens applied when studying these factors and the potential added value that they can have regarding happiness. In the following sections and also in Table 1 later in this paper, this issue will be discussed in more detail.

Intentional activities

As is clear from Figure 1, there is one factor left which relates to a promising way to work on happiness: intentional activities. These activities relate to behavior, a factor that is within people's ability to control. By focusing on activities, people have the ability to *deliberately* increase their happiness through what they *do* in their lives and how they *think* (Lyubomirsky, 2007). Research on happiness-increasing activities has demonstrated that such activities work, both in the short and the long term (Sin & Lyubomirsky, 2009; Lyubomirsky & Layous, 2013).

There are some important issues to remark in this respect. Firstly, the notion of 'intentional' is important, as people have to deliberately make the choice and be motivated to engage in activities that are meaningful for them (Lyubomirsky et al., 2011). Secondly, a good person-activity fit is indispensable in this respect: taken into account that people have different interests, talents, values, needs and wants, some activities might work for some people but not for others. Thirdly, it is assumed that intentional activities require some degree of effort from the people undertaking and maintaining them: people really have *to do something*, and be actively involved.

This point is a critical distinction between life circumstances and intentional activities. As Lyubomirsky et al. (2005a) state: '*... circumstances happen to people, and activities are ways that people act on their circumstances*'. For instance, it can be that a person has a particular work affiliation at a particular moment in his life (the fact of having a work affiliation is a life circumstance) but that at another moment in his life, this person deliberately undertakes action to change this (actively looking for other work and going to job interviews thus concerns an 'intentional activity'). In addition to people's motivation, efforts and beliefs in engaging in meaningful activities, their personality also is an important factor in determining what people potentially have to gain from engaging in a particular activity (Lyubomirsky & Layous, 2013). Ideally, an intentional activity results in boosting positive emotions, positive behavior, positive thoughts and

satisfaction of needs of the person engaging in the activity (Nelson et al., 2015).

In the view of different researchers from positive psychology (Lyubomirsky et al., 2005a; Lyubomirsky, 2007; Lyubomirsky & Layous, 2013), intentional activities appear to be the best possible way for people to work on their happiness. In the authors' view, focusing on activities opens tremendous possibilities for design to contribute to the happiness of people. Looking specifically at the potential contribution that architecture and interior architecture can have in this respect, it seems highly valuable to consider these as 'spaces' where people can deliberately set up intentional activities that contribute to their happiness (Authors, 2014). There is a huge challenge in further exploring how architects and interior architects can design spaces in such a way so that they can function as a generous, inspiring and fruitful context wherein people can set up meaningful activities that contribute to their happiness.

Happiness, architecture and interior architecture: refining the determinants of happiness

In terms of semantics, subjective well-being (SWB) has different connotations: 'to be well', and 'to feel well'. In the authors' viewpoint, the first conceptualization ('to be well') relates to happiness-relevant circumstantial factors, which have been discussed in the previous section. Looking at life circumstances from an architectural perspective, typical questions in this respect are: 'Am I physically healthy?', 'Do I have a shelter?' etcetera.

The second conceptualization of SWB ('to feel well') relates to more subjective parameters with regards to well-being, and bring us to the importance of intentional activities. Looking at this factor from an architectural perspective leads us to questions such as: 'Can I be happy in this environment?', 'Does the environment enable me to work on my personal happiness?' etcetera. In this description, personal viewpoints and subjective issues are at stake, which can be considered as potential '*consequences*' of the environment wherein one resides. In the authors' viewpoint, it is this second conceptualization that seems particularly interesting and inspiring from the perspective of architects and interior architects who want to focus and work on the happiness of people. Being happy in an environment has to do with what people who reside in a particular architectural or interior environment are able to do with and in that environment, or, put differently, how the environment enables them to do something meaningful or something that adds meaning and pleasure to their life.

Reflecting about these different conceptualizations of SWB from an architectural perspective brought us to refining Figure 1, as in the authors' view, there are factors contributing to happiness which sometimes can be labelled as an 'intentional activity' but which at other times can be labelled as a 'life circumstance' (see Figure 2). For instance, it can be that a person has

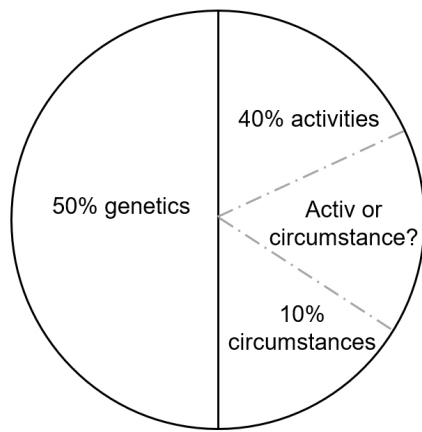


Figure 2. Refining Lyubomirsky's determinants of happiness circumstance or activity?

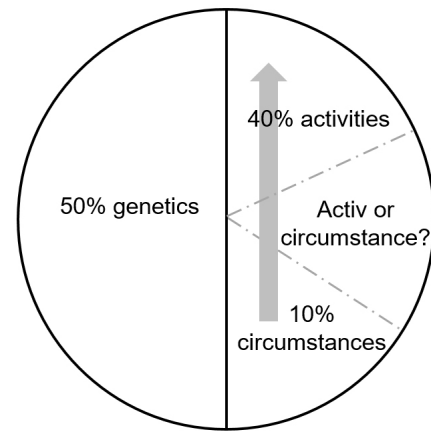


Figure 3. Refining Lyubomirsky's determinants of happiness from the viewpoint of architecture and interior architecture.

a particular religious affiliation at a particular moment in his life (the fact of having a religious affiliation is a life circumstance) but that at another moment in his life, this person deliberately undertakes action to change this (practicing religion thus becomes an issue for which 'intentional activities' are undertaken).

In addition, there are factors contributing to happiness which concern a 'life circumstance' (for instance, architecture and interior architecture, see the grey arrow in Figure 3), but which can function as an enabling *context or platform* where people can set up intentional activities that meaningfully contribute to their happiness.

Architecture and interior architecture: a circumstantial factor that contributes to enabling activities

In the authors' view, a building or interior as such cannot make a person happy. Architecture or interior architecture relate to a circumstantial factor which can only contribute to happiness by designing a *context* wherein *activities* can take place or can be organized which possibly can contribute to a person's happiness. Designing such contexts is challenging, because it requires a designer to truly empathize with the future users of the concerned context. Sometimes this will concern an individual, namely when an architect or interior architect is working for an individual paying client. Here, empathizing with the future user is mostly straightforward, as there is the possibility of truly having a close contact and relationship. But at other times, architects or interior architects will be asked to design a future health care facility, a school, or an office environment. Empathizing in such projects is truly challenging, as architects or interior architects are required to dive into the worldview of the concerned target group, get to know the needs and wants of the different stakeholders involved and have to do a meaningful effort in trying to combine these different sources of input into a valuable architectural or interior architectural concept that can appeal and answer to the different stakeholders' longings and aspirations.

Exploring the impact of architecture and interior architecture on happiness

As mentioned before, there is already a wide array of research in positive psychology about happiness and happiness-enhancing strategies. However, to date, it is recognized that '*researchers do not yet fully understand the causal role of the mediating factors that lead to improved well-being*' (Nelson et al., 2015, p. 256). Nelson & Lyubomirsky (2014) point to the relevance and importance of future research to investigate the '*underlying mechanisms that lead positive activities to successfully improve well-being – that is, the 'why' question ...*' (p. 5). In their view, if research could succeed in identifying why particular activities are effective in enhancing happiness, it will be possible to gain a better insight in the determinants of happiness. In addition, these insights can have important repercussions regarding potential tools that can be designed to help people to work on their happiness. In this section of the paper, the authors discuss an attempt which they undertook to answer Nelson & Lyubomirsky's 2014 call.

Primary and secondary analysis of happiness

In their paper on 'measuring and comparing happiness', Van Praag & Ferrer-i-Carbonell (2010) differentiate between a primary and secondary analysis of happiness.

Primary analysis of happiness: are you happy?

In Van Praag & Ferrer-i-Carbonell's view (2010), a primary analysis entails calculating the individual scores which research participants give to separate items which were added to a happiness measurement instrument in order to come to a general happiness score. The results of such analyses allow to differentiate between the proportion of people who are happy and unhappy, whereby different variables such as age, income, gender etcetera can be taken into account.

As Lyubomirsky (2007) and Veenhoven (2014) recognize, there is currently no widely accepted 'happiness measurement instrument', which is not illogical taken into account the inherent subjective character of happiness. As happiness is always subjective, it is

difficult for others than the concerned person whose happiness one aims to measure, to objectively assess a person's happiness level. As such measure does not yet exist, researchers focusing on happiness today mostly rely on the methodology of self-report. Here, research participants indicate to what extent they perceive themselves to be 'happy'.

In this line of thought, Lyubomirsky & Lepper (1999) developed the 'Subjective Happiness Scale', consisting of a four item measurement which results in a general 'happiness score', but there are numerous other happiness self-report measures possible (for an overview, see Veenhoven, 2012). According to Van Praag & Ferrer-i-Carbonell (2010, p. 7) self-report questions concern *'the prototype of the happiness questions, which form the basic instrument for all studies in happiness economics'*.

Secondary analysis of happiness: why are you happy?

Secondary analysis goes a step further and dives deeper, as it does not try to measure how happy a person is, but aims to find out *why* a person experiences happiness. This kind of analysis tries to find determining factors that can help to explain why individuals are happy or unhappy. This type of analysis is what Nelson & Lyubomirsky (2014) were calling for. In what follows, we discuss the set-up of a secondary analysis instrument which aimed to gain insight in the importance of architecture and interior architecture in the happiness of people.

Gaining insight in factors or determinants of happiness of users of a(n interior) space is the starting-point to understand or try to capture how architecture and interior spaces work, are perceived or can be designed in order to allow people to undertake meaningful activities that contribute to their happiness. If designers could have better insights in the ways in which people perceive and experience environments, and how these potentially contribute to their happiness, they could be enabled to design more 'appealing' atmospheres and environments which in turn could enable people to set up meaningful activities that contribute to their happiness.

An explorative study with a Happiness Circle

In order to further reflect about the potential contribution that architecture or interior architecture might have in contributing to a person's happiness, it is important to gain insight in their role in this respect. Therefore, we designed a 'Happiness Circle'. This instrument can be considered as an explorative tool that aims to gain insight in the different factors that contribute to a person's happiness.

Research objective

Previous research (Lyubomirsky et al., 2005b; Nelson et al., 2015; Lyubomirsky & Layous, 2013; Veenhoven et al., 2014) has demonstrated that there are different sources for enhancing human happiness. In order to further reflect about the potential contribution that architecture or interior architecture might have in contributing to a person's happiness, it is important to gain insight in their role in this respect. Therefore, we designed a 'Happiness Circle' (see Figure 4).

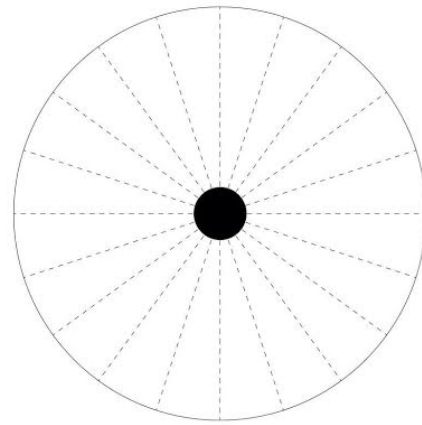


Figure 4. The Happiness Circle.

Development of a Happiness Circle

Research on happiness has pointed to the importance of different factors of happiness:

- health or physical well-being (Achat et al., 2000 ; Lyubomirsky et al., 2005b)
- personal development (Bauer et al., 2015 ; Straume & Vitterso, 2015)
- having work (Graham et al., 2004 ; Lucas et al., 2004)
- having friends / social contacts (Diener & Seligman, 2002 ; Burger & Caldwell, 2000)
- time for oneself / time for hobbies or things that I like (Mishra, 1992 ; Nimrod, 2008)
- family, children, partner (Diener et al., 2000 ; Hansen, 2010)
- music (Laukka, 2007 ; Fujiwara et al., 2014)
- religion (Berg, 2010 ; Myers, 2013)
- holiday, excursions (Gilbert & Abdullah, 2004 ; Nawijn & Veenhoven, 2011)
- money (Diener & Biswas-Diener, 2002 ; Berg, 2010)
- nature, garden, wood, mountains, sea (Van Herzele & de Vries, 2012 ; MacKerron & Mourato, 2013)
- weather (Fischer & Van de Vliert, 2011 ; Connolly, 2013)

These factors were listed after a thorough review of literature, which was performed via an extensive search through the World Database of Happiness (<http://worlddatabaseofhappiness.eur.nl/>). Here, different publications pointed to the relevance of having friends / social contacts, health, time for personal development, having work, family / children / partner, money, music, religion, holiday / excursions, factors relating to nature, weather and having time for oneself. This overview does not pretend to be exhaustive, but aims to list important mediating factors and intentional activities that can contribute to happiness.

Given our interest in a potential contribution of architecture and interior architecture, the factors of 'house (architecture)' and 'interior architecture' were added to our list.

In essence, the factors which were selected are all significant in their contribution to happiness, but they do not contribute to the same extent to happiness;

they concern factors of a different 'order'. Relating each of these factors to the determinants of happiness which were discussed in the first section of the paper (that is, life circumstances, intentional activities and the refining which the authors did in-between these categories of determinants of happiness) results in the following overview (Table 1).

Research procedure

The Happiness Circle (see Figure 4) was part of a short questionnaire which started with four questions relating to socio-demographic variables (i.e., age, gender, education and professional status). Next to these socio-demographic variables, the questionnaire presented a circle to the respondents. They were asked to complete a 'Happiness Circle' which aimed to gain insight in the different factors that contributed to their happiness.

Research participants were free to add other factors than the ones listed in Table 1, for as long as the total sum of their Happiness Circle would result in 100%. For respondents' ease, the circle was already divided in slices of 5%. Participants could select the factors that they wanted, and needed to determine for themselves to what extent these particular factors contributed to their proper happiness.

17 master students in interior architecture and in architecture helped to gather data in 2015. Each student was instructed to look for at least 12 participants, equally spread over gender and different pre-defined age categories (i.e., 18-37 year, 38-57 year, 58-77 year). None of the participants could have a background in architecture or interior architecture or be professionally employed in this area, to avoid potential bias for the factors 'house (architecture)' or 'interior'.

In the end, the sample consisted of 212 research participants.

Research analyses and research results

The calculation of mean scores demonstrated that 'family / children / partner' was the factor that was most important to our sample (23%), followed by 'health / physical well-being' (21%) and friends / social contacts (11%). This seems logical, taken into account the results of the literature review that was performed to gain insights in the importance of different factors of happiness (see Table 1).

In addition, which is important from our point-of-view, architecture and interior architecture came to the fore as determining factors in the happiness of people (see Table 2). As Table 2 illustrates, they seem to contribute to the same extent to our sample's happiness as religion or nature.

Conclusion

Due to the spirits of our times, different researchers in architecture and interior architecture are starting to reflect about the question how the built environment can contribute to happiness (Smith et al., 2012; Authors, 2014).

But, in order to determine whether it is worthwhile for the discipline to engage in a deliberate focus on design for happiness, it is important to find out if, and if so, to what extent, architecture and interior architecture contribute to happiness. A review of literature on happiness pointed to the relevance of different factors which ranged from circumstantial factors that people just have to face, circumstantial factors that can function as a platform for enabling people to undertake activities, factors which can be a life circumstance or can relate to an activity, or activities

Table 1. Selection of determinants of happiness.

Life circumstance ('mediator')	Circumstantial factors which can trigger an activity	Factors which can be a mediator or which can relate to an activity	Activity	Happiness
				Health of Physical well-being
				Friends, social contacts
				Family, children, partner
		Having work		
			Personal development	
			Time for oneself / time for hobbies or things that one likes	
			music	
		Religion / religious affiliation		
			Holiday, excursions	
Money				
Nature, garden, wood, mountains, sea				
Weather				
	House (architecture)			
	Interior			

contributing to happiness. In this respect, the authors do not pretend that the list of factors determining happiness which they studied is exhaustive. What is renewing in this paper, is that the research and analyses demonstrate that architecture and interior architecture truly contribute to happiness.

In the authors' view, there are numerous opportunities for future research. Firstly, there is a wide array of possibilities of 'contexts' where architecture and interior architecture can have a valuable contribution to happiness. Secondly, future research needs to pinpoint how architects and interior architects can concretely contribute to the design of environments that enable people to undertake activities that contribute to their happiness. This will not always be evident: architects and interior architects in practice do not always work for individual paying clients; they also deliver design for schools, care facilities, office environments, where multiple individuals need to 'live' and 'function' together, and need to be enabled to work on their happiness. In our view, striving for the designing of generous environments which offer various possibilities for current and future users can be a valuable road in this respect. Thirdly, future research also needs to collect more empirical data to make it possible to test concrete research hypotheses that can be relevant for architects and interior architects.

Ultimately, we share the viewpoint of Mary-Ann Knudstrup, a Danish professor in architecture, who recently (2011) stated that 'well-being elements should carry at least as much weight as technical, rational and economic considerations in the process'.

Table 2. Mean scores of determining factors for people's happiness¹.

Variable	N	Mean	Std Dev	Min	Max
Family	212	23,4	13,1	0	85
Health	212	20,9	12,5	0	65
SocialContact	212	10,8	8,9	0	45
TimeforMeExtra	212	8,7	8,1	0	55
TimeforMe	212	8,0	7,2	0	30
Money	212	6,6	6,4	0	30
WorkExtra	212	6,5	8,4	0	50
Work	212	6,5	8,4	0	50
Holiday	212	6,2	7,1	0	35
NatureExtra	212	3,2	5,1	0	25
Nature	212	3,1	5,1	0	25
Home	212	3,0	4,5	0	20
Religion	212	2,3	5,9	0	30
Interior	212	2,2	4,1	0	30
Music	212	1,9	4,3	0	30
PersDevelopm	212	1,9	4,6	0	30
Weather	212	1,3	3,2	0	20
Other1	212	0,9	3,8	0	40

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1 Table 2 differentiates between a factor 'TimeforMeExtra' and 'TimeforMe'. 'TimeforMe' relates to respondents who used the factor 'time for for oneself / time for hobbies or things that one likes' which was proposed next to other determinants of happiness. 'TimeforMeExtra' concerns the items which respondents added to the proposed factors but which in essence concerned factors relating to 'TimeforMe' (e.g., working in the garden, working on my car, having a long sleep, giving attention to my pets). 'WorkExtra' relates to items which respondents added to the proposed factors but which in essence concerned factors relating to 'Work' (e.g., school). 'NatureExtra' concerns the items which respondents added to the proposed factors but which in essence concerned factors relating 'Nature' (e.g., enjoying the seaside).

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