Not care but leisure

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D.G. Bouwhuis, Not care but leisure. Gerontechnology 2006; 5(2):63-65. Technology for older adults usually focuses on assistance and care, emphasizing the frailty of older adults. Most older adults, however, are independent, with strong convictions and no time to be patient. This is related to remaining time of life and the consequent undesirability of postponement of benefits. It is proposed that assisting older people to navigate available information spaces as well as physical environments, including leisure services, to obtain desired benefits is an important research agenda. This requires strong disciplinary research and extensive evaluation, which might form a good topic for gerontechnology.

In the ever intensifying quest for technology for older adults most attention is devoted to provide assistance for things that they can no longer do, or which they should do, but do not remember. In the last call of the 6th framework program of the European Commission, 231 proposals were submitted for funding in the area of Ambient Assisted Living in April 2006[1], and they all had as their main objective to enable older persons to stay longer in their own home and to increase their independence. On reading the summaries there can be no doubt that many managers have considered these noble objectives as a means to increase their research portfolio with European funding, no matter what the topic. But quite likely there must be some sensible proposals among them that deserve funding. There are two general comments that one could make at this point.

EXPLOITING FRAILTY

Of course, it is particularly laudatory that so many research institutions take this issue seriously, realizing that each proposal combines some 8-10 partners, bringing the total of participating institutions to some 2,000. It should be clear that it is inconceivable that all of these would have the expertise necessary to attain the objectives. And regarding the alarming lack of concreteness that one can spot in the descriptions, it is also unthinkable that useful products or services would materialize from many of them. Maybe this can create the realization that attempts to write a similar proposal in the future would be futile. That would be good.

However, the apparently massive interest of so many parties in trying to exploit the frailty of older people also raises expectations for tools and services that cannot possibly satisfy the claimed needs. In other words, is the call for Ambient Assisted Living not too ambitious to warrant wide dissemination, industrial exploitation, especially by Small and Medium Enterprises? Will it actually, within the lifetime of projects, emancipate older people with full participation in social life, free from worries about medication, security, mobility and getting around in the home and outdoors?

The inevitably slow progress in making useful and effective products available to older people may then cause a shift of interest in the direction of what is then seen as a promising area, and then it will not be technology for older people any-

more. So far, gerontechnology has not made sufficient inroads to improve the expertise, the interdisciplinary approach, and the mobilization of resources to an acceptable level.

HANDLING OLDER ADULTS

There is a second comment to be made. Everyone who actually has been involved in studies with older people in his or her own laboratories will have noticed that they behave qualitatively different from their younger counterparts. Trying to hire them is a first problem; they are never at home and entertain a hectic schedule of appointments, meetings, trips, visits and, frequently, care activities. Many of these outings are subject to a rigid schedule that a humble experimenter is unable to modify, even for a single time. They are usually quite cooperative and helpful during the experiments, but can also be critical, to the extent that they refuse to carry out experimental tasks that they deem unworthy of their self-esteem. They may also profess they cannot possibly carry out the task, which usually turns out not to be the case, or they may painstakingly point out the fundamental flaws in the experimental design.

This is far from the bleak picture that is painted of the helpless older person, sitting alone at home, threatened to be institutionalized at the expense of the taxpayer and whose independence is continually challenged, if not vanished altogether. It cannot be denied that there are many homebound older people that fully deserve care that technology might provide. But for a large group of older people, and probably the majority, there is another issue that is important and which is not easily addressed with technology. It is phrased most concisely in the clause that is in every American contract: "Time is of the essence."

IMPATIENT

In contrast to widely held preconceptions about the character of older people who are claimed to be more patient than youngsters, they do not have the time to be patient. This is nicely summed up in the notion of intertemporal discounting. Discounting means that something is decreasing in value, and intertemporal means that this happens as a result of time lapse. A reward that is obtained in the far future is worth less than one that can be obtained immediately, and the value is lower as the reward lies further into the future. Anne-Sophie Melenhorst and I did a study on intertemporal discounting in groups of older people within three different age brackets: young elderly, elderly, and the very old[2]. These subjects had to choose between what they considered to be the most attractive holiday they could imagine but to be taken at a much later date, and their second preferred holiday to be taken within a week. One might expect that these people, wise through experience and willing to optimize their enjoyment would always go for the most attractive holiday. However, this was clearly not the case. All older subjects discounted strongly; the longer they had to wait for a holiday, the less it was chosen. What was revealing was that the discounting rate grew stronger with age. In the oldest groups, a waiting period of half a year was almost unacceptable.

Experiments on intertemporal discounting have hardly been done with older people, but they have the most valid arguments for discounting. From their own statements it appeared that they were fully aware of the imminence of death. The earlier they take an opportunity, the higher is the likelihood to enjoy it; after they pass away it will be gone forever. There is no second chance. This must imply a greater emphasis on benefits of actions and services. If the benefit can be taken only after much time or after much effort, it may be too late. And this explains the critical attitude of older subjects in our

experimental sessions. If they see the benefits, they participate with utmost willingness but they have no time for what they see as useless and effortful actions. There is no time for that.

PRODUCING LEISURE TIME

But how can technology produce time? Obviously, the answer is not to produce time but ways to spend time better. It is from this abstract statement that ways have to be implemented to achieve this goal. And then there is the gnawing suspicion that technology use may require so much of your time that you better spend it on something else. It might be that personalized search services, and navigational support are key issues to providing those provisions that older people are really interested in. Such products require strong disciplinary research and extensive evaluation, and seem a good topic for gerontechnology. This is clearly a long-term issue, such even that it might be feared that its attractiveness will be discounted strongly in the intertemporal perspective of researchers.

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Gerontechnology motivation

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J.E.M.H. van Bronswijk, Gerontechnology motivation. Gerontechnology 2006; 5(2):65-67. Gerontechnology's framework has been formulated in a functional way, with little attention paid to motivation. Abraham H. Maslow's theory of human motivation (1943) can fill this gap with his hierarchy of needs to be fulfilled in the following order: physiological, safety related, social, esteem and 'being' related.

Keywords: human motivation, technology use, Maslow

Functionality is the basis of the framework of gerontechnology that consists of a two-dimensional matrix of human activity domains and technological impacts[1]. Technology intended to coach activities and lifestyle aim at compressing morbidity and increasing the life-period of vitality. Physical attractiveness of gadgets will play a role, as will persistence, anonymity, tailoring, scaling, gaming and ubiquity of computer technologies[2]. But most of all it is technology push that should be changed in market pull[3]. For engineers we need a simple but effective approach to motivation in order to bring this market pull into action.

ABRAHAM H. MASLOW 1943

As far as I am aware of, the psychologist Abraham H. Maslow (*Figure 1*) neither mentioned gerontechnology, nor worked in this area. However, his theory on human motivation of more than 60 years ago[4] could become a source of inspiration for engineers. As a recent author[5] stated, speaking of Maslow: "His significance lies in the future and will become apparent in the 21st century".

Maslow formulated his theory in 1943 and based it on the hierarchy of four deficiency needs to be fulfilled in the following order: physiological, safety related, social, and esteem related. To complete the healthy human adult he added a higher and more spiritual 'being-need': self-fulfilment or self-actualisation. In Maslow's theory gratification of needs is the main driving force for motivation.

Figure 1. Abraham Harold Maslow (1908-1970). Photograph by courtesy of the Archives of the History of American Psychology – The University of Akron

Physiological needs are the most basal and should be fulfilled first. The higher safety needs will only be perceived when the lower physiological needs are well gratified. As soon as safety, stability and protection are perceived at an acceptable level, a new set of even higher needs comes up: belongingness and love. Subsequently, when these needs are reasonably fulfilled, the individual starts to appreciate self-respect, self-esteem, and esteem or recognition from others. Some (but not all) individuals go further and start self-actualisation or self-fulfillment (the being-need[4]).

THE HIP PROTECTOR CASE
If we take into account the deficiency needs of older adults, the lack of motivation for use of an external hip protector[6] is understandable. Preventing hip fractures is a deficiency need at the *safety level*. Daily experience with this device resulted in 15 out of 19 users feeling too hot (a *physiological deficiency*), while 14 out of 19 could not easily visit the toilet anymore (also a *physiological deficiency*). So the more basic physiological needs were not taken care of and within three months around 2/3 of the users threw away this care application.

THE WAY-FINDER CASE
In the case of the way-finder, older adults took part in an iterative process of design[7]. Professional designers started the project from *a safety perspective* (or a 'compensation & assistance' device in gerontechnology terminology): to prevent older adults from getting lost in town. After the comments of the older adult co-designers the design aim shifted towards an electronic tourist guide (an 'enhancement & satisfaction' device in gerontechnology terminology). Apparently the users felt safe enough. Their needs were at the *social level*.

DIVERSITY
One additional aspect of the need hierarchy is the increased inter-person diversity of higher needs (*Figure 2*). At the *physiological level*, needs among individuals in the same age and gender group are comparable. They all need to breathe, to drink, to eat, to sleep, to go to the toilet, and to seek shelter from environmental risks. Physiological needs are related to potentially fatal risks. Supportive technology is more or less generally applied. We have legislature to protect us against fire, murder and unsafe working conditions.

The perceived *safety needs* show a higher diversity as to fears and anxieties towards non-fatal risks, such as falling and not being found for several hours, have your home robbed, or becoming a street violence victim. But the range of needs is still small enough to have it covered partially by legislation on civil rights and human conduct.

Needs in the one-step higher *social sphere* are strongly influenced by individual life-histories. It is the level of (dis)satisfaction with functioning. Relevant legislature is almost non-existent, but unwritten social and cultural codes are part of the set-up of each society.

Feelings of inferiority, perceived lack of self-dependence or self-determination, or non-fulfilment of other ego-needs are individual assets attached to the highest, *esteem-related* deficiency level. General esteem is the aim at this level. No legislature nor civil codes of conduct apply to it.

Figure 2. Technology impacts[1] superimposed on the hierarchy of needs[4] and their relative diversity; Only 'Enhancement & Satisfaction' reaches the being-need

A NEW DIMENSION

Making gratifying needs a driving force in design of products and services could boost the implementation of market pull. Maslow's needs belong around the planning table in design and development of technologies for a longer vital life.

Acknowledgments

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7. McCreadie C, Raper J, Gunesh A, Wood J, Carey K, Petrie P, Wood L, Tyler S, Biggs S. Persuasive way-finding and leisure for all: development of a personal navigation tool. In: IJsselsteijn WA, Kort YAW de, Midden CJH, Eggen JH, Hoven EAWH van den, editors. First International Conference on Persuasive Technology f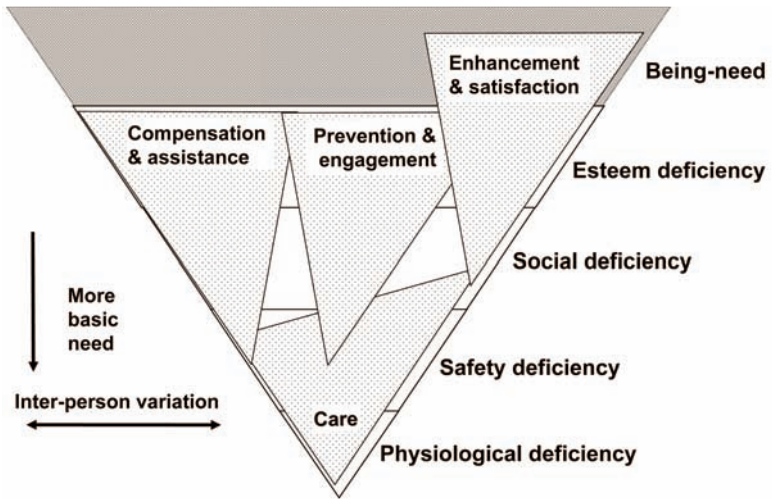or Human Well-Being. Heidelberg: Springer; 2006; pp 187-190