Homo ludens: Adult creativity and quality of life

J.L. Fozard PhD
School of Aging Studies
University of South Florida, Tampa. FL 33612, USA
E: fozard@tampabay.rr.com

H. Bouma PhD
E: h.bouma@gerontechnology.info

A. Franco MD
Centre Hospitalier Universitaire de Nice,
Nice-Sophia-Antipolis University, Nice, France
E: franco.a@chu-nice.fr

J.E.M.H. van Bronswijk PhD
Group Performance Engineering for Built Environments
Department of Architecture, Building and Planning
Technische Universiteit Eindhoven, Eindhoven, the Netherlands
E: j.e.m.h.v.bronswijk@tue.nl

J.L. Fozard, H. Bouma, A. Franco, J.E.M.H. van Bronswijk. Homo ludens: Adult creativity and quality of life. Gerontechnology 2009; 8(4):187-196; doi: 10.4017/gt.2009.08.04.001.00 Fun and its associated technology has been with modern man from the start of his existence, and has been put central in human cultural and personal development during his whole life span. However, technology for pleasure and leisure for older adults is scarcely researched, and not included in international ADL or iADL schemes, probably because gerontechnology and most gerontology was established in the 2nd Machine Age of modern cities that focuses on somatic health, and not so much on experience and emotion. The recognition of increased diversity with age in desires and aspirations is mirrored by a greater detailing of the ages of the 2nd half of the human lifespan. Each of the 4 sub-ages of the well known 3rd age of life (active retirement) calls for its own approach to creativity and fun: a sense of quest at midlife reevaluation, new energy at liberation, finding a larger meaning at summing up, and long-lasting contributions for the encore phase (in sensu Cohen). Technological support of this enjoyable creativity may take the form of low tech or high tech, as long as the man-machine interface fits the life-long experience and technology generation of individual older adults.

Keywords: pleasure, leisure, creativity, older adults, technology

"This is a remarkable time scientifically in the field of aging. Longtime negative myths and stereotypes are being turned upside down, replaced by new findings pointing to those positive changes in the second half of life that occur because of aging, not despite aging. Science regarding aging has become exciting, surprising, positive, and hopeful". – Gene Cohen MD PhD (1944-2009)[1]

'Not care, but leisure' served as title of the editorial of issue 5(2) of this journal[2]. Here Bouwhuis observed that desires and leisure were seldom the subject of study in gerontechnology. Rather articles mainly addressed assistance and care, emphasizing the frailty aspect of very old age. Still pleasure, leisure, and fun to play are central in human cultural and personal development and remain

so during the whole life span. In his 1938 classic '*Homo ludens*, a study of the play element in culture'[3], Johan Huizinga (1872-1945) showed the profound influence of our instinct to play on such diverse fields as law, science, poverty, war, philosophy, and the arts; in short on all achievements of man. The book was widely distributed, and is still available in a number of languages, such as the original Dutch[3], Danish[4], English[5], Estonian[6], Finnish[7], French[8], German[9], Greek[10], Hebrew[11], Hungarian[12], Indonesian[13], Italian[14], Portugese[15], Spanish[16], Swedish[17], Turkish[18], and other translations. The present essay provides a comparable way of linking technology to the fun needs of aging and aged people – the desire for creativity.

The playfulness of modern man has an extended history. Body painting is known as early as 152,000-176,000 years ago[19]. The Chinese classic 周易 (Book of changes) of the Western Zhou dynasty (1046-771 BC) mentions 兌 – Dui [pleased satisfaction] already[20]. The proverb 'Panem et circenses' (Bread and games) originates from old Rome around 100 AD[21]. The Dutch monk Desiderius Erasmus' (±1467-1536) opus 'The praise of folly' has been dated 1509[22]. Some newer examples of fun and its associated technology may be found later in this issue[23-26].

Technology for leisure and pleasure for older persons usually supports hobbies or sport[27-29], musical performance[25, 30], gaming[24,26,31,32], sexual fun[23] or companionship[33,34]. The health potential of these activities is high. For example, in comparison to a control group, participation in a simple cultural fun program (chorale) increased health rating, diminished the number of doctor visits and the amount of OTC (over-the-counter) medication, decreased the number of falls, improved mood and stimulated other activities (*Table 1*).

The rapid development of the Wii user interfaces for virtual games has opened up many options for enjoyable physical activities within elderly groups, e.g., virtual bowling leagues in nursing homes and other congregate living activities, and between members of different generations[31,32].

In view of this widespread notion of the importance of play, fun and pleasure, it is surprising that technology for fun in later years is scarcely addressed by research. Only 12% of scholarly papers on 'fun technology' concern older adults, while 69% are devoted to children (*Table 2*). In addition, frail persons find little support for their pleasure and fun. These elements of daily life are not mentioned in the scales for ADL (Activities of daily living)[36] or IADL (Instrumental activities of daily living)[37]. In these schemes, fun, if any, is only implicit. The scheme of IADL-extended 'Management & Enjoyment', does mention fun in the explanatory text, but pleasure is still implicit in the tasks mentioned[38]. The first two international gerontechnology conferences[39,40], and the first volume of this journal[41] also showed little or

Table 1. Effects of a cultural fun program (chorale) at 12 months follow up for healthy adults over 64 yrs of age; p <0.05 for all parameters; at baseline the 2 groups did not differ for the parameters shown[34]

Parameter	Mean (SD)	
	Intervention (n=77)	Comparison (n=64)
Health rating	8.0 (1.6)	7.3 (1.9)
Doctor visits	6.7 (7.0)	10.8 (14.5)
OTC medication	2.6 (2.1)	4.3 (4.6)
Falls	0.2 (0.7)	0.6 (1.3)
Mood (morale)	14.1 (2.7)	13.1 (3.3)
Weekly activities	4.3 (2.6)	2.6 (1.8)

Table 2. Google Scholar hits on 'Fun technology', also in combination with other key words, as of December 10, 2009

Extra keyword(s)	Number of hits	
	n	%
None	87	100
children OR child	60	69
adult	28	32
"older person" OR elderly OR "older adult"	10	12

no interest in technology for fun. As pointed out by Doevendans[42], this oversight of fun and the focusing on 'technical' health is related to the prevailing culture at the time of the inception of Gerontechnology, which he calls 2nd Machine Age of the modern city. Our current cultural period, the 3rd Machine Age, has more room for experience and creativity.

The ages

In his book, 'The Creative Age"[43], Gene Cohen MD PhD (*Figure 1*) argues that the second half of life offers continuous opportunities for creativity in both the internal emotional aspects of our lives but also in the public display of group and individual activities. Cohen was a psychiatrist and scientist who has played a major role in the analysis and treatment of normal and pathological psychological processes associated with aging. He pointed out that traditional analyses of human development focus almost entirely on the years from infancy to young adulthood. Five of the eight stages in Eriksson's[44] developmental classification are devoted to childhood and adolescence and the sixth is devoted to the first half of midlife. The remaining two are called "*…generativity - an interest in guiding the next generation through personal action or a legacy of work - and integrity - coming to terms with our successes and failures in life and our relationships*"[43 p 69].

In those analyses the role of play and creativity is linked to early stages of cognitive and emotional development, e.g., when we learn to talk, to read, to develop a sense of identity that links us to our peers and distinguishes us from our parents. Cohen identifies the work of Daniel Levinson[47] as one to extend formal descriptions of human development to the forties and fifties. Most people know about this period of development through the popular concept of the 'midlife crisis.'

Figure 1. Gene D. Cohen MD PhD (1944-2009), author of the book 'The creative age', was the first director of the Center on Aging, Health & Humanities (established 1994) at George Washington University (GW), where he also held the positions of professor of Health Care Sciences and professor of Psychiatry and Behavioral Sciences. Within the GW Center, he recently launched a new public education program on aging targeting the young; the program is called SEA Change—an acronym for Societal Education about Aging for Change. He also cofounded the Creativity Discovery Corps whose mission is to identify and preserve the creative accomplishments and rich histories of under-recognized talented older adults. He was the deputy director then acting director of the National Institute on Aging (NIA) during the tenure of the first author as associate scientific director of the NIA[45, 46].
Photograph by courtesy of Joshua Soros

With children grown, a relatively long history of work, stable relationships oriented around raising family, and recognition of their own physical aging processes, adults

in midlife crisis rethink their interests, relationships—both intimate and casual, and acquire an awareness of their own mortality as they experience the old age and death of their parents. Cohen[43] points out that there are many positive and joyful aspects of the 'midlife crisis,' e.g., the development of new vocational and recreational interests and new relationships. The 'crisis' part of the development may include disruptions of existing relationships as well as changes in the scope and meaning of existing ones. Cohen goes on to identify additional stages of adult development corresponding to the 3rd age of the gerontological scheme of Laslett[48], resulting in a more balanced division of the total human lifespan (*Table 3*).

Table 3. An integrative classification of the emotional (sub)ages in the human life span, based on earlier schemes[43,44,48]; a change in (sub)age is always gradual

Age	Short characterization
1	*Childhood dependency and socialization*
1.1	Infant – Feeding, being comforted, teething, sleeping
1.2	Toddler – Bodily functions, toilet training, muscular control, walking
1.3	Preschool – Exploration & discovery, adventure & play
1.4	Schoolchild – Achievement & accomplishment
1.5	Adolescent – Resolving identity & direction, becoming a grown-up
2	*Responsibility and work life*
2.1	Young adult – Intimate relationships, work & social life
2.2	Mid-adult – 'giving back', helping, contributing
3	*Period of fulfillment (Late adult)*
3.1.	Midlife reevaluation – change of mortality perspective
3.2.	Liberation – new energy
3.3	Summing up – self-assessment
3.4	Encore phase – affirm life
4	*Frailty, loss of independence and autonomy*

Creativity for fun

Cohen[43] posits four sub-ages of the 3rd age of Laslett[48] and relates them to creative needs and aspirations, the basis of fun in the life of the older person. By definition, these phases require the passage of time[43 p 116]; they cannot occur without the accumulated experiences of earlier life, just as the phases in childhood that were defined by Eriksson[44]. Cohen[43] comments that these sub-ages are flexible, sometimes even coexisting or intersecting.

Midlife reevaluation

Creative expression is shaped by a sense of quest - people want to make their life or work more gratifying. It combines the capacity for reflection with the desire to create meaning in life. It occurs in those between their forties and early sixties. "*The kids are on their own. Now it's my turn. I'm raring to go*" (Joan, 50). Another feature of this phase is a change in the way we think about death, "*…from something that happens to something that will happen…*" in Cohen's words[43].

Liberation

Creative expression is shaped by the energy that comes from within a person and from outside circumstances through retirement. People are comfortable with their self image and with their opinion of what others believe about them. It occurs in those approaching their sixties to early seventies. "*I've never been much of a risk taker, but I feel now that if something came up where I had to do something, I know I would do what needed to be done*" (Juan, 65)[43]. More opportunities become available for hobbies and leisure, and gamers aged 65+ play even more frequently than any other age group[24].

Summing up

Creative expression is shaped by the desire to find a larger meaning in the story of our lives and accrued experience or wisdom. People in this phase recognize their role as 'keepers of the culture'[43 p 79], expressed through autobiography, personal storytelling, philanthropy, community activism, and

volunteerism. This phase occurs among those in their seventies or older. *"I understand life's issues better now, and it helps me when I work on canvas"* (Will, 78). *"I see more clearly now the importance of volunteerism and paying back…sharing that with the rest…"* (Celia, 81)[43].

Birren & Deutchman[49] and Butler[50] have made the case of using autobiography or 'life review' as a therapeutic tool for older persons with depression and for enjoyment, self-fulfillment, and intergenerational communication. While agreeing with these authors, Cohen[43] goes on to view autobiographical activities in the larger context of a strong personal urge for creativity that manifests itself in the later part of life.

Encore phase

Creative expression is shaped by the desire to make strong lasting contributions on a personal or community level, to affirm life, take care of unfinished business and celebrate one's own contribution. This phase occurs in those in their eighties or older. *"I was always good at golf, and I like going out on the course…..There are other things, too, that I came to do well…like helping people solve problems"* (Nate, 92)[43].

Frailty

In the 4th age (*Table 3*) frailty with or without chronic disease, and increasing loss of independence and autonomy are occurring. Here the double hazard of disease is getting more prominent. Age related health problems have two detrimental effects: (i) Specific problems, associated restrictions and by-effects, also of therapies, and the overall time-consumption of these specific problems, and (ii) the extra attention to oneself as a patient, which diverts from more fruitful pursuits. Here the goal of fun technology is to counteract self-attention, self-pity, and over-attention by satisfying and motivating

Table 4. Common aspirations for fun and examples of their technological support in the 2nd half of the human life span

Age		Aspirations	Fun technology examples
#	Name		
3.1	Midlife reevaluation	Sense of quest	Adventurous and cultural mobility and travel support[29,65]
			New virtual interest groups not oriented around child rearing
			Quick learning schemes for new interests
3.2	Liberation	New energy	Computer games[27]
			Creative software for hobbies
			Support for singing, dancing and musical performance[30]
			Technology for Senior Games[66]
3.3	Summing-up	Larger meaning search	Photoshopping for preparing autobiographies
			Support for home video presentation making intergenerational games[32]
			Video conferencing with grandchildren
			Family-tree software
3.4	Encore phase	Affirm life	Graphics for storytelling (personal and historical)
			Intuitive communication means
			Wii-like versions of well known sports
4	Frailty, dependence	Diversion from disease	Simple, but advanced music player
			Games and recreational entertainment[25]
			Pleasant exercise alternatives[28]
			Companion robots[33,34]

subject matter: the remaining personal ambitions as expressed in the top-row of the gerontechnology impact matrix: that of Enrichment & Satisfaction[51,52]. Implementing technology to provide fun could become an important therapeutic approach for specific chronic conditions and multimorbidity, not only for the end-user (the older adult), but also for the intermediate users (the carers). It could even increase cognitive function[24].

Supporting creativity

All phases in the second half of the life-span have their characteristic spectrum of fun technologies (*Table 4*). Cohen[43 p 167] devised 'The Social Portfolio' as a tool for people to explore and develop the creative potential of later life. The portfolio distinguishes between group and individual efforts conditioned on two levels of mobility and energy, high and low. The group/individual dimension recognizes individual differences in personality and background: examples of group efforts in the portfolio include taking international folk dance lessons in host countries (high mobility) and creating a family newspaper with children/grandchildren (low mobility).

Group effort

All the virtual communication aids are available, ranging from e-mail to social networks, e.g., Facebook, dating services, and virtual chat room groups. At a more sophisticated level, video conferencing techniques are becoming more accessible to remotely connect members of a social group. One example was of a man, currently housebound because of a stroke, who kept in communication with friends in a local senior citizen group with which he was a member via a video link between the public area of the senior citizen center and his bedroom, open during selected times of the day[53].

Technology supporting virtual communication can be especially useful in autobiographical projects that involve intergenerational formats. Developing slide shows, video clips, interviews, etc. with children and grandchildren is an excellent way of achieving the therapeutic benefits of autobiography and being a keeper of the culture for older persons in the summing up and integration stages of development. The materials can be created by others for older persons who can only participate in a limited way in the activity. Cohen describes his own family effort to create a visual history of events in his father's life that helped the father, who was in an advanced state of Alzheimer's disease, relate to his family even though he did not recognize his family members. Cohen[43 pp 283-290] described the TR-Bio (Therapeutic/Restorative Biography), the preparation of biographical materials for others. The formats include videocassette, yearbook, video visit, and interactive question and answer sessions or perhaps question and comment sessions in the case of persons with dementia.

Individual efforts

There is a large variety of on-line games, and information about creative activities in many classes of hobbies from woodworking to essay writing and investment strategies available on the Internet. Seniornet in the USA and similar organizations in Europe and Asia provide instruction for computer-based activities such as photo editing and creating home videos. One popular course is for editing and altering digital photos using Adobe Photoshop elements. Many programs that support singing and playing are easy to use, e.g., Karaoke, Music Minus 1, etc. Others, such as Sibelius software for serious composing and arranging of music, require a significant learning period. Some programs come with tutorials, and organizations may provide low cost instruction such as Seniornet in the USA which offers an excellent online tutorial for Photoshop Elements.

Other examples of individual efforts include creating an annotated walking tour of your town (high mobility) and creating a family tree with descriptive commentary (low mobility). Efforts along the two dimensions are not mutually exclusive -a passion for

painting can coexist with a group oriented activity in local politics-, but the mobility dimension reflects the reality of the widening of individual differences in physical and cognitive functioning that accompany aging. Technology has a supporting and facilitating role to play in all aspects of creativity discussed in Cohen's book.

Quality of life & technology use

The goals of gerontechnology are to create and adapt environmental interventions that improve the health and functioning of aging and aged people and to improve their quality of life; in short: to help them to remain a complete person[54]. Three of the four gerontechnology goals derive from the three goals of public health interventions -primary, secondary and tertiary prevention-, and are called prevention & engagement, compensation & assistance, and care management & care organization, respectively[55]. The fourth goal, enrichment & satisfaction, includes fun technology and is applicable to the other three as well. It concerns the role of technology for improving the quality of life at all levels of intervention. Together, these four goals for technological interventions are applied to the five broad areas of human activity -health & self-esteem, housing & everyday activity, communication & governance, transport & mobility, and work & leisure-, to describe the entire field of gerontechnology[51].

The conceptual basis for the role of technology in improving the quality of life by enrichment & satisfaction in adult aging is less well articulated than that of its role in prevention, compensation, and care. At a basic level, technology can create new opportunities for social interactions and friendships; adventuresome and challenging activities; artistic expression, learning and work[55]; the most widespread application being communication technologies, and lately, gaming.

The motivating power of technology itself is stressed in the 'persuasive technology' approach and operant conditioning[56]. One of the most successful motivators is the slot machine used in gambling casinos that attests to the importance of partial reinforcement schedules: an occasional jackpot for feeding a stream of coins to the machine. Maslow's hierarchy of needs[57] -from primitive to self-actualization-, fits well with the goals of gerontechnology interventions, but is limited because the hierarchy of needs doesn't explain a lot of behavior. The willingness of terrorists to endure hunger and extremes of physical exhaustion and to sacrifice their lives in carrying out their actions seems to run counter to western notions of a drive towards self-actualization.

There are many reasons why older people use or do not use technology, particularly in recreational activities. Within the framework of gerontechnology theory, we point to the importance of 'technology generations', which includes the disconnect between familiar and newer user interfaces and devices that inevitably occur across age cohorts as technology changes[58]. Such technology generations could be filled with the 'forms of life', little scenarios of rule-following actions of individual older adults, as offered by Leikas[59], to help the designer of suitable (fun) technologies. The temporal discounting notion put forth by Bouwhuis and Melenhorst[60] states that people elect to learn to use technology depending on the effort required relative to the estimated time of life still available to the potential user as well as to competing activities.

Conclusion

The usefulness of Cohen's approach lies in the broad array of ways people fulfill their desire for pleasure and the linking of many of those ways to specific tools and techniques. Good design based on gerontechnology principles, such as Inclusive Design[52,61,62], allows us to take advantage of Cohen's concept of 'the creative age' in the 2nd half of life.

Several issues require further study and discussion before adapting or developing

gerontechnologies that support Cohen's concepts of creativity. Among them are the changes in the familiarity and accessibility of technology to aging persons of different generations. The use of technology by digital natives (born in the 1980s and beyond) and digital immigrants (representatives of earlier generations) may well affect how well technology supports creativity and other types of fun in older age[63,64].

The thesis of this essay is that gerontechnologies, both high and low tech, could support and facilitate fun and creative processes associated with aging. We gave an overview of Cohen's concept of creativity in relation to aging, and linked this paradigm with the options for supporting fun in creativity related to aging and technology. Now that culturally we have entered the 3rd Machine Age of the modern city[42], more room for 'experience' exists, and also older adults may reap the harvest of new options in having an agreeable life!

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