

Toward Age-Friendly Design

Document derived from the 4th International Longevity Forum on
“The role of design and technology in an ageing society”

The role of design and technology in the context of rapidly ageing populations was the theme of the 4th International Longevity Forum held in Rio de Janeiro in October 2016. The Forum brought together a diversity of designers, philosophers, engineers, architects, gerontologists, geriatricians and other health professionals, government and private sector representatives as well as civil society organizations, with the intention to better elucidate a process toward age-friendly design and to open space for an ongoing age-friendly design movement.

Introduction

Design is the oldest form of communication. Everything that is expressed by human beings is design. It is a continuous and an evolutionary process that does not develop in isolation but within a context. Intrinsic to it, is a freedom from dependency. Design is not limited to material products. It is a **process toward solving problems** across the five "P" domains – **people, place, products, person-centered services, policies.**

We get much of our culture from the results of our design. George Burden

“Design is a continuous learning experience.” Gabriel Patrocínio

There is no singular ownership of design but neither is there sufficient democratization of it. Too often, it is user-centered rather than user-led. Too often, it is design for the middle rather than design for the edges. Too often, it is design for personas or idealized persons rather than *real* people. Too often, it is uni-, multi- and inter-disciplinary rather than trans-disciplinary in nature. Too often, is emotion seen as a side product to design rather than its *leitmotif* or driving-force. Too often, there is an impulse

“Design should be about the exceptions, not about the averages.” David Sinclair

“All of us should behave and be treated as full citizens.” Pedro Luiz Pereira de Souza

for big change rather than evolution. Too often, does design divide groups rather than unite them.

Designers need to be fully aware that every culture is an extraordinary reference of learning and creativity. There is a need to be both specific and generic in our design approaches. We need to think small and local but with scalability in mind. Design should enable and empower.

"Inclusive design is better design."

Gabriel Patrocínio

We should be aware that innovation without access is useless. The easily measurable should not be the sole driver of design. Hard to quantify human responses (such as fear, pride, affection) must be consciously factored into the process. We must search out the groups that are scantily considered.

The Longevity Revolution

Two people in the world celebrate their 60th birthday every second.ⁱ By 2050, 30% of the populations of 64 countries will be aged 60 and over.ⁱⁱ It will create a global pool of more than 2 billion older people and it will surpass the number of children under 15 years of age.ⁱⁱⁱ Already, there are more human beings in the world over the age of 60 than below the age of five.^{iv}

"We cannot create tomorrow as if it was a copy of today." Loïc Garçon

"When I was born, life expectancy at birth in Brazil was 43 years. Today it is approaching 76. This is revolutionary."

Alexandre Kalache

The Longevity Revolution has generated predictions of dire economic and social consequences based on an assumption that older persons constitute a growing burden for the rest of society. Recent analyses however, reveal that the fast-

moving demographic transformations do not signal macro-economic catastrophe but that there must be an urgent rethinking of outdated perceptions about older adulthood and the life-course trajectory itself.^v The gift of longer life is one of civilization's finest achievements and it generates almost limitless potential for overall human development.

moving demographic transformations do not signal macro-economic catastrophe but that there must be an urgent rethinking of outdated perceptions about older adulthood and the life-course trajectory itself.^v The gift of longer life is one of civilization's finest achievements and it generates almost limitless potential for overall human development.

Gerontolescence or late middle age, a contemporary transitional phase delineated more by attitudinal and functional markers than chronological age, is now emerging.^{vi} It represents a unique and unprecedented stage of human development and embodies distinct features. Gerontolescents are reinventing how their stage of life is lived and viewed - in the same way that they did in their youth.

The social construct of adolescence was largely a creation of the baby boom generation. Prior to the 1940s, there was an

"In what world do we want to grow old?"

Loïc Garçon

"It is unimaginable that this generation will experience older age like previous ones." Alexandre Kalache

Active Ageing Concept

Population ageing is coinciding with other converging and inter-dependent global trends that together are shaping our collective future. These dynamic forces impact every aspect of each individual life at all ages - creating an enormous range of opportunities as well as a long list of risks that cannot be considered in isolation.

"This is about all of us, young and old. We will all (hopefully) be an older person one day and the earlier we prepare for it, the better." Ina Voelcker

The components of **health, life-long learning, participation and security** are fundamental "pillars" for effective strategic action on age-friendly design. The Active Ageing concept captures these key features in a positive

"Old age belongs to all of us." Marta Pessoa

and holistic vision of ageing in a rapidly changing world.^{vii} Both as an individual aspiration and as a social goal, Active Ageing is framed within the current theoretical perspective of **resilience** -

"Resilience can be designed and built."
Alexandre Kalache

"The urban space is as much about the psycho-social as the physical."

Andrea Holz Pfützenreuter

defined as "having access to the required reserves to adapt to, endure, or grow from, the challenges encountered in life"^{viii}. Its intention is to enable people to realize their potential for physical, social and mental

well-being throughout the entirety of their life course and to participate in society according to their needs, desires and capacities - while simultaneously providing them with adequate protection, security and care when required.

"The two major reasons why the age-friendly cities project is so sensible - it is based on the principle of active ageing and the policy recommendations were developed bottom up, by listening to the voices of older people." Sir Michael Marmot*

The Active Ageing philosophy has found its most cogent and widespread expression in the worldwide Age-friendly Cities movement. It forms a significant part of the design response to the two defining demographic trends of the 21st century - widespread population ageing and urbanization.

The Fourth Industrial Revolution

The Fourth Industrial Revolution is producing profound, ultra-fast systemic shocks that require imaginative and continually adaptive human responses. Characterized by a *hyper-connectivity* between a vast range of components, the Fourth Industrial

"Knowledge was the key asset for the 20th century, imagination is the key asset for the 21st." Anthony Hilton**

Revolution is creating an unprecedented fusion of seemingly disparate new technologies across the digital, physical and biological domains.

These highly innovative collaborations, informed by unique real-time insights derived from an easy

"The fourth Industrial Revolution is the inexorable shift from the simple digitalisation that characterised the third industrial revolution to a much more complex form of innovation based on the combination of multiple technologies in novel ways". Klaus Schwab***

segregation, analysis and compression of data/mega-data, power the current Industrial Revolution. It is opening a wide door to many new drivers of change and much greater opportunities for the customization of products and services. It also signals a shift from "ownership" to "access", which in turn, is reconfiguring service delivery, dramatically reducing transaction/friction costs and producing a

radical transformation in the nature of employment (e.g. Uber and Airbnb). It has been estimated that 60% of the occupations to be performed by the next generation do not yet exist.^{ix} At the same time, it is predicted that 47% of present day jobs in developed countries could be at risk within the next two decades.^x

"Our inventions change the world and the reinvented world changes us".
Sheila Jasanoff****

The speed and depth of the changes, the increased job insecurity, the imposed mobility, the growing need for multiple identities and the uneven ownership of the technologies necessitates that much more attention is given to the human and cultural disruptions. More than ever, there is a need for inclusive design approaches that enhance resilience, emotional intelligence, self-reflection, well-being and empathy.

How to innovate on ageing

Genuinely listening to the voices of real older persons in their context must be at the very core of the design process. "*Design with us, not for us*". Good design must open spaces for fresh protagonisms, challenge stereotypes, resist formulaic approaches, strengthen

"Living labs can give older persons protagonism." Nico Schiettekatte

"Designers need to learn the language of other professionals to get out of their comfort zone." George Burden

capacity for critical reconsideration (particularly in regard to linear and closed processes) and reflect on the use, value and inclusiveness of technologies. It must reach well beyond traditional partnerships.

Age-friendly Design Process

Older Persons as Protagonists: More real people (fewer averages or personas); recognition of vast heterogeneity in older age; pathways to inclusion; communication enhancement; respect for privacy/dignity; and greater ownership of design and own data.

Context: Gender; culture; physical setting; social integration/exclusion; cognitive and physical capacity; level of independence/autonomy; life history; social status; sexuality; emotional resilience; education; regulatory frameworks; human rights, inter alia.

Collaboration: Emphasis on trans-disciplinary (as opposed to inter-disciplinary) approaches; user-led rather than user-centered; identification of partners across a wide range; transcendence beyond specific skill sets; embrace of appropriate integrative technologies; valuing of low tech; building sustainable support networks.

Expertise: Openness; accessible language/vocabulary; emphasis on dissemination; awareness raising; sharing of ownership; ethics.

Process: Open structures; critical reflection on design methods and the use of technologies; constant re-evaluation, deconstruction and refutation; sharing of best practice, intergenerational perspectives; agile governance; measurement.

Enabling Actions: Effectiveness; simplification; scalability; resistance to "over-design"; interoperability; stimulate positive emotional outcomes.

Questions to consider

- How to identify and give voice to those with limited capacity to express?
- How to build an ethic that designs safety into lives without imposition and intrusion?
- How to avoid distortions based on on-line information that contains intrinsic biases?
- How to avoid cognitive overload?
- How to devise regulation and legal frameworks in a world of exponential change when we are often only afterwards aware of the risks?
- How to be true protagonists of age-friendly design when the frontiers of technology are moving so fast?
- How to design today for an imagined future based on the experiences of the past?
- How to safe-guard human rights?
- How to ensure that age-friendly innovation brings generations and communities closer?
- How to resist the impulse to focus on radical change for its own sake?
- How to promote dialogues to enable creative actions out of simple elements within the context of complex situations?
- How to engineer societies where the mass of people retain feelings of self-worth, control and purpose?

Conclusion

There is a strong need to genuinely democratize and to spread the ownership of design. Opportunities for greater

"We have to put genuine power back into the user's hands." John Mathers

"It is not only learning about computers, it is about learning to overcome difficulties."

Tom Kamber

inclusiveness of population sub groups, more permeable process and more tailored products and services and more peer-to-peer solutions are presented by intelligent processes, the efficient collection/collation

of segregated data/mega-data, inter-connectivity and the new technology-enabled platforms.

Real older people in the context of their lived experience should be the starting point and the driving force of all age-friendly design. The new technologies have the capability to offer *all* individuals instant call-up expertise and the potential for choice at every stage of the design continuum.

"Everyone has intuition and should make full and total use of it." Gabriel Patrocínio

There must be full recognition of the enormous heterogeneity of older persons. Older people tend to be less like each other than younger people are to each other, as they have had more time to accumulate differences. In addition, the emerging cohorts of older persons differ significantly from their antecedents.

"A robot may not give love but it may give autonomy to those who can afford it."

Ina Voelcker

Human emotion must be placed at the core

of age-friendly design. Much more design focus should be given to the human trauma caused by radical and exponential change. We must concentrate on enhancing

markers of well-being (such as resilience, emotional intelligence and sense of control) across the entirety of the life course. We must develop ways to strengthen through design such quintessential human qualities as self-reflection, well-being, empathy,

"Ethical action is not inherent in technology." Luiz Alberto Oliveira

"If you design better for older people, you design better for all." John Mathers

compassion and a global culture of care.

We need to stimulate solidarity between the technology-rich and the technology-poor to avoid greater class, inter-generational and international fragmentation. Digital exclusion must be addressed in all settings. We should give consideration to a type of Marshall Plan to technology-poor communities and countries to enable them to harness appropriate design and to leapfrog development.

"Share, empower and monitor." Tom Kamber

We must move beyond a rigidly commercial model of design (e.g. look to such concepts as an Uber model for volunteerism). We must focus on technologies that stimulate imagination, creative process and meaningful social interaction across all ages.

The role of age-friendly design should not be to design ageing away. There should be recognition that there is intrinsic value, essence and experience at all stages of life. There must be room for many levels of decision-making about what enhances or diminishes our humanity.

Age-friendly design should be built on the four converging fundamentals of health, life-long learning, participation and security across the entirety of the life-course.

Health: Technology is changing virtually every aspect of the healthcare continuum. From immersive virtual reality for pain relief, videogames to treat ADHD and depression to big-data analytics, gene editing, nanotechnology, 3D printing of live tissue and the hacking of cancers. While new medtech is changing some cost structures and extending some reach across groups (e.g. emerging mobile devices that can reduce the cost of an ultrasound from \$80 to \$2^{xi}), the real health needs of the majority of the world's older population remains woefully under-considered. Inadequate design is excluding entire sections of the population from the benefits of technology.

Life-long Learning: Increasingly rapid obsolescence means that everyone at all stages of the life-course must reprogram themselves for constant adaption and renewal. On-going health literacy is essential for self-care, on-going financial literacy is necessary to manage income and expenses and on-going technological literacy is required to maintain relevance. The OECD considers continuous learning

"Information is not knowledge. It is only knowledge when it is processed." Bitiz Brandão

to be one of the most important components of human capital in an ageing world.^{xii} It is not only access to information that is important but the acquired skills to discern, evaluate and translate that information.

Participation: Age-friendly design must promote engagement in any social, civic, recreational, cultural, intellectual or spiritual pursuit that brings a sense of meaning, fulfilment and belonging. The active involvement of all citizens at all levels of decision-making keeps

"We all have to be more protagonist than we are." Pedro Luiz Pereira de Souza

democracy robust, makes policies more relevant/responsive and empowers individuals. Engaged individuals create social capital that is consistently associated with health/well-being and higher labour participation contributes to collective prosperity.

"Sometimes, we in the media focus more on the company that produces the product than on the usefulness of that product." Claudia Collucci

Security: Security is the most fundamental of human needs (and rights) at *all* ages. We cannot fully develop our potential in the

"Technology is neither self propelling nor value free." Sheila Jasanoff^{****}

absence of it. Insecurity has a corrosive effect on individual physical health and emotional well-being

"Too often we end up with a care-giving model that is about deficits rather than assets." John Mathers

as well as the collective social fabric. Age-friendly design must engage with the protection of older adults and facilitate the emergence of an authentic global culture of

care. Care-giving must be reconfigured as a shared responsibility.

"We, gerontologists, have to dialogue more with designers." José Ricardo Jauregui

Updated version: 14th of February, 2017

EXPERT GROUP

Maria Beatriz Afflalo Brandão (formerly Federal University of Rio de Janeiro - UFRJ), George Burden (formerly University of Design Schwäbisch Gmuend), Camila Cazerta (Brazilian Society of Dermatology - SBD), Claudia Collucci (Newspaper "Folha de São Paulo"), Rafael Costella (start-up "BeFine"), Elena Del Barrio (Matia Foundation), Denise Del Re Filippo (School of Industrial Design of the State University of Rio de Janeiro – UERJ/ESDI), Loïc Garçon (WHO Kobe Centre), Andréa Holz Pfützenreuter (Federal University of Santa Catarina - UFSC), José Ricardo Jauregui (Argentinean Society of Geriatrics and Gerontology -SAGG), Alexandre Kalache (ILC-Brazil), Tom Kamber (Older Adults Technology Service - OATS), Luciana Keller (UERJ/ESDI), William Marinelli (start-up "BeFine"), John Mathers (Bureau of European Design Associations - BEDA), Elisa Monteiro (ILC-Brazil), Emma Murphy (Trinity College), Marcelo Neira (SBD), Luiz Alberto Oliveira (Brazilian Centre for Research on Physics - CBPF), Gabriel Patrocínio (State University of Rio de Janeiro – UERJ and Getúlio Vargas Foundation - FGV), Carlo Pereira (CPFL Energia), Pedro Luiz Pereira de Souza (UERJ/ESDI), Marta Pessoa (start-up "Páginas Prateadas"), José Elias Pinheiro (Brazilian Society of Geriatrics and Gerontology - SBGG), José Sanches (University of Sao Paulo - USP), Nico Schiettekatte (Holland Innovation Network, Consulate General of the Kingdom of the Netherlands in Sao Paulo), Paula Schuabb (UERJ/ESDI), David Sinclair (ILC-UK), Silvia Steinberg (UERJ/ESDI), Renato Veras (Open University of the Third Age - UnATI/UERJ), Ina Voelcker (ILC-Brazil), Maria Cristina Zamberlan (National Institute of Technology - INT).

ACKNOWLEDGEMENTS

We would like to express our gratefulness to the designer Silvia Steinberg for her considerable contribution to the production of this document as well as to the Portuguese version, translated by Carlos André Oighenstein.

--

- * Sir Michael Marmot, President of the World Medical Association, Professor of Epidemiology and Public Health at Harvard and University College London.
- ** Anthony Hilton, Journalist, Author and Broadcaster.
- *** Klaus Schwab, Founder/Executive Chairman of the World Economic Forum.
- **** Sheila Sen Jasanoff, Founder/Director of the Program on Science, Technology & Society, Harvard University.

ⁱ UNFPA, HelpAge International, Ageing in the 21st Century: A Celebration and a Challenge. New York/London: UNFPA/HelpAge International; 2012.

ⁱⁱ Ibid.

ⁱⁱⁱ United Nations Department of Economic and Social Affairs Population Division, World Population Prospects: The 2012 Revision. Highlights and Advance Tables. Working Paper No. ESA/P/WP.228. New York: United Nations; 2013.

^{iv} Ibid.

^v Bloom DE, Chatterji S, Kowal P, Lloyd-Sherlock P, McKee M, Rechel B, et al. Macroeconomic Implications of Population Ageing and selected policy responses. Lancet. Elsevier; 2014.

vi Kalache A, The Longevity Revolution; Creating a Society for all Ages, Government of South Australia; Department of the Premier, SA; 2013.

vii **(a)** Active Ageing: A Policy Framework in Response to the Longevity Revolution, International Longevity Centre-Brazil, ISBN 978-85-69483-00-7; 2015. **(b)** Active Ageing: A Policy Framework, World Health Organization, 2002.

viii Ibid.

ix Arturo Bris, World Competitive Centre, IMD Business School, Switzerland; 2016.

x Schwab, K, The Fourth Industrial Revolution, World Economic Forum; ISBN-13:978-92-95044-55-5; 2016.

xi Qualcomm & Trice Imaging; 2016.

xii Keeley, B., OECD Insights - Human Capital: How what you know shapes your life. Paris, OECD Publishing; 2007.

SPONSORS AND PARTNERS

