

## A Chinese response to the aging society

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Y-L. Hsu, *A Chinese response to the aging society*. *Gerontechnology* 2016;14(4):187-190; doi:10.4017/gt.2016.14.4.011.00 Mainland China has the world's largest aging population. On the other hand, Taiwan, Hong Kong, Macao, and Singapore are hit simultaneously by rapid population aging and extremely low birth rate. Gerontechnology has started to receive a lot of attention in the Sinophone world as a positive solution in maximizing the efficiency and effectiveness of manpower and resource in elderly care. This special issue on Chinese response to the aging society is organized by the Sinophone Chapter of International Society for Gerontechnology. All six invited papers emphasize understanding of older adults in different parts of the Sinophone world, and from different perspectives. Filial piety (Xiào) is one of the cornerstones of gerontechnology in the Sinophone world. The Sinophone Chapter has been dedicated to promoting gerontechnology research, cross-strait collaboration (between Taiwan and Mainland China), education, and industrial collaboration. Moving forward, promoting industrial-academic collaboration, turning gerontechnology research into real products or services, will be the 'last mile'.

**Keywords:** aging society, gerontechnology, Sinophone world

The Sinophone or Chinese speaking countries and regions, include China, Taiwan, Hong Kong and Macao. A significant portion of population in countries like Malaysia and Singapore also speak Mandarin Chinese as native language. The native Mandarin Chinese speaking population is by far the largest among all languages in the world<sup>1</sup>.

Traditional Chinese culture and value are shared across the Sinophone world. However, the aging problems faced by different countries and regions are quite different. Mainland China has the world's largest aging population, and this Chinese population are 'getting old before getting rich', with limited ability to support old age life. Satisfying the care needs has been the primary issue. On the other hand, Taiwan, Hong Kong, Macau, and Singapore are hit simultaneously by rapid population aging and an extremely low birth rate. According to the 2015 crude birth rate data published<sup>2</sup>, Hong Kong (9.23/1000 population), Macao (8.88), Taiwan (8.47) and Singapore (8.27) rank 206, 211, 216 and 219, respectively, among the 224 countries and regions listed. According to the same source, 2015 fertility rate of Hong Kong (1.18/woman), Taiwan (1.12), Macau (0.94) and Singapore (0.81) rank 221, 222, 223, 224, respectively. Traditional pattern of family support for elderly care is gradually vanishing.

Facing this stern and lasting challenge, it may not be practical to keep increasing manpower and resource for elderly care. A better strategy could be trying to maximize the efficiency and effectiveness of the manpower and resource. Gerontechnology has started to receive a lot of attention in the Sinophone world as a positive solution in this regard.

### THE CHINESE RESPONSE

Gerontechnology product or service design requires understanding the needs, choices and preferences of the older adults and their care givers, their changes in physical and psychological conditions, as well as older adults' acceptance of technological products are all important design tasks, before any technology is even considered.

This special issue on the Chinese response to the aging society is organized by the Sinophone Chapter of International Society for Gerontechnology (ISG), registered as Chinese Society of Gerontechnology and Service Management (CSG) in Taiwan. It publishes six papers, including three papers from mainland China, two from Taiwan, and one paper from Malaysia. Instead of presenting specific gerontechnology product or service design, all six invited papers emphasize the understanding of the older adult in different parts of the Sinophone world, and from different perspectives.

Being able to use ICT devices, or simply accessing computers and internet by the older adults, is perhaps the fundamental requirement for a gerontechnology product or service to be implemented. Gan et al.<sup>3</sup> use a large-scale survey data to explore the disparities in computer access and use among the differently-abled senior citizens in mainland China. The main finding is the enormous digital gap among the generations, with as additional predictors for digital empowerment: male gender, higher educational level, living in urban areas, full or part time employed, and having self-care ability.

Caring needs are of primary concern for most older adults, who are well aware of modern

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Figure 1. Chinese characters of filial piety (pronounced as 'Xiao'); left: the ancient version, right the modern one, both showing an older person carrying a walking stick (upper half), and a young kid with open arms (lower half)

changes in society. Gao, Liu and Yan<sup>4</sup> present an empirical analysis of urban residents' choice for caring patterns in different stages of aging, based on a questionnaire survey conducted in Beijing. Since the traditional caring pattern with family support is diminishing, the majority of healthy older adults live alone (80% in Beijing), who would prefer to be offered a place in a care institution when frailty comes near, not considering community care. The authors conclude that demand regulation is needed, to be focused on the young elderly (below the age of 70) to lead them into community care.

In contrast, Wang, Chen and Chen<sup>5</sup> explore Taiwan elderly home care service industry to understand the connotations, types, and importance of the home care service needs of the elderly people. While using Maslow's hierarchy of needs they showed that the main concern of older Taiwanese people is physiological, especially the availability of food; followed by the security domain of needs, mainly health and security. Esteem-related needs are third and of increasing importance, with emphasis on 'The elderly's view on themselves and life'. The authors would like to see more in-depth and improved services and products to achieve older people's aim of a successful aging-in-place.

Issues of housing are important for older adults. Lin, Lee, and Fozard<sup>6</sup> investigate the self-rated importance of the safety and convenience of housing for older adults in Taiwan. Of the 29 housing attributes deemed important by the older people, a total of 14 performed well in today's society. One important attribute, smoke detectors in the kitchen were important, but performed much less and improvements are urgent. Very interesting was the low priority the older people gave to another 10 attributes that performed badly. For some of these, such as those related to fall accidents, children are encouraged to still modify their parents' home for healthy aging and well-being.

On the communication and leisure side, Sun, Zuo and Kong<sup>7</sup> from China, analyze the better

way of communication with children to increase older adults' life satisfaction. Life satisfaction of older people requires face-to-face communication with their children. Non face-to-face communication can have an additional positive effect, but only when the frequency of face-to-face communication is less than once in every six months. The findings are meant to suggest to young people how to wisely choose their pattern of non face-to-face communication with their parents.

Finally, it is worthwhile to understand the acceptance to technology of older adults in the Sinophone world. Joseph et al.<sup>8</sup> explore the factors underlying the acceptance of Chinese older adults in Malaysia to technology through a qualitative exploratory method. With enhancing quality of life, happiness, independence and convenience as desired outcomes of technology use, predictive factors were mainly related to personal factors (fear of use and personality) and economic factors (cost). The authors remark that their study provides a fresh insight for scholars and others in order to understand the influence of technology on older adults' happiness, extending current technology acceptance models that focus perceived enjoyment and playfulness.

This special issue almost covers the broad scope of gerontechnology: health, mobility, housing, communication, leisure and work (only mobility and work are missing), which hopefully provides an overall picture and fundamental data of needs in gerontechnology in the Sinophone world.

### FILIAL PIETY

The success of a gerontechnology product or service depends heavily on culture and social acceptance, which could bring out that internal motivation for older adults and their caregivers to genuinely like to use the gerontechnology product or service.

Gerontechnologists who are interested in the Sinophone world should also be aware of the Chinese culture and social values related to gerontechnology, such as 'Xiào' (filial piety). In Confucian philosophy, filial piety is the virtue of respect for one's father, elders, and ancestors. The Confucian classic 'Xiao Jing' (Classic of Xiào, written about 2½ millennium ago<sup>9</sup>), is the authoritative source on the Confucian tenet of 'Xiào'. The book is a conversation between Confucius and his student Zeng Shen (Zengzi), about how to set up a good society using the principle of 'Xiào'.

Filial piety is still an essential element of Chinese culture shared across the Sinophone world,

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where children growing up are constantly and emphatically taught to be filial to their parents and respectful to their elders. Filial means in this context (i) to be good to one's parents and take care of them, (ii) to engage in good conduct towards parents and the society in order to bring a good name to parents and ancestors, (iii) to perform the duties of one's job well in order to obtain the material means to support parents, as well as (iv) not being rebellious, but show love, respect and support, display courtesy, maintain fraternity among brothers and sisters, (v) to advise one's parents, when needed, to dissuade them from moral unrighteousness, and (vi) display sorrow for their sickness and death.

In short, filial piety is referred to the responsibility to care for, respect, and obey parents. Sometimes filial piety becomes a huge social pressure, or even a standard of judging people in the Sino-phone world. It is a strong criticism if someone is accused of not being filial to one's parents. This high expectation of the relation between generations should actually be considered and utilized in the strategies of gerontechnology product/service design. As can be seen, aspects of filial piety are apparent in all six papers mentioned above.

*Figure 1* is the Chinese character of 'Xiào', which is a vivid pictographic character. The upper half of the character is an older person carrying a walking stick, and the lower half of the character shows a young kid with open arms. Many traditional interpretations describe this character as "the young kid carries the older person on the back", or "the young kid lends an arm to support the older person". A warmer and perhaps more appropriate interpretation describes this Chinese character 'Xiào' as "the caring embracement between the older person and the young kid".

Filial piety, "facilitating the caring embracement between generations", can be a very important goal for the design of gerontechnology products or services for better culture and social acceptance, particularly in the Sino-phone world. Gerontechnology should emphasize a lot more on designing for people, rather than technological functions. For example, a telepresence robot that facilitate face-to-face communication for older adults and their children, might be better accepted than an autonomous robot with many fancy technical functions. Design for connectedness, design to enhance interaction of the older adults with their families and children, environment and society, can be a good strategy for gerontechnology.

### MOVING FORWARD

ISG Sino-phone Chapter (CSG) established in year 2009, has been dedicated to promoting



*Figure 2. A young gerontechnologist in aging simulation suit experienced what it feels like as an older adult performing daily tasks; this is part of the so called 'eldpathy' program of , Yuan Ze University*

gerontechnology research, cross-strait collaboration (between Taiwan and Mainland China), education, and industrial collaboration. The 'Journal of Gerontechnology and Service Management' established in 2012 publishes peer-reviewed papers in Chinese for original research, literature surveys, best practices, and case studies. The journal also offers free online access and free university library subscription for promoting gerontechnology academic research. CSG annual conferences are held in member universities in turn. 95 Papers in different fields of gerontechnology and service management are presented in the 2016 conference. CSG was also the proud host of ISG 2014 World Conference.

Based in Taiwan, CSG has been in charge of cross-strait exchange in the field of gerontechnology. Sponsored by the Ministry of Science and Technology of Taiwan and the National Natural Science Foundation of China, eight 'cross-strait collaboration teams' were formed in 2015, for 3-year research projects in the field of gerontechnology on topics shared and concerned by both Taiwan and mainland China. CSG played a crucial role in this cross-strait research collaboration.

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Education is the key element moving forward. Gerontechnology is of growing concern in the higher education in Taiwan, where there are 83 departments or institutes that contribute to the development of Gerontechnology in 48 universities<sup>10</sup>. A nation-wide 'Innovative Gerontechnology Product / Service Design Contest' is held every year by CSG to encourage students from various backgrounds to raise their new ideas in gerontechnology. In addition to creativity, empathy and feasibility of becoming a product are emphasized in the design contest. Student teams entering the final round have to attend a one-day training course in which industrial experts share their views and experience about the elements of a good product and how to transform from ideas, prototypes, into products. Students also

participate in the 'eldpathy' program, where they are requested to perform daily activities in 'aging simulation suits' (Figure 2).

Gerontechnology research is only valuable if it can be realized into products or services that benefit older persons and their caregivers. Bouma et al.<sup>11</sup> listed 'business management' as one of the disciplines of related technology, and pointed out that "Management science has established itself as an indispensable enabling discipline to bring the fruits of technology to the global market place, and ensuring that the products, services, and infrastructures are realized". Promoting industrial-academic collaboration, turning gerontechnology research into real products or services, will be the 'last mile' moving forward for CSG.

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