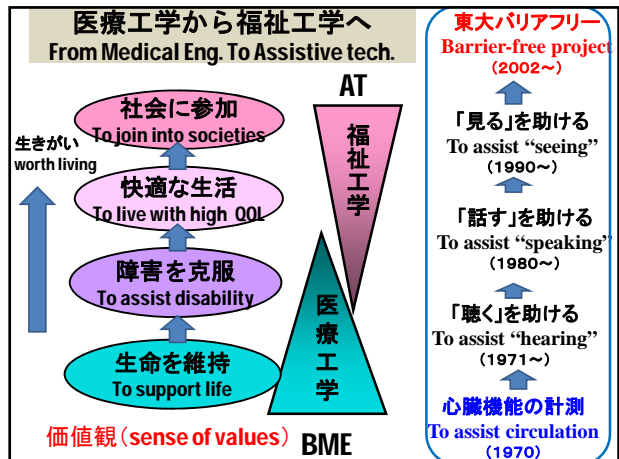


高齢社会においてメディアに期待されているもの What is Required by a Society with an Aging Population?



Senses and communication

伊福部達
東京大学高齢社会総合研究機構
Tohru Ifukube
Institute of Gerontology, The University of Tokyo, Japan



自己紹介「ゴジラ音楽と緊急地震速報」 "Godzilla music and chime for earthquake warning"

アイヌ音楽をモチーフにした「ゴジラ」の映画音楽
Movie sound "Godzilla" composed by my uncle



原音 original



編曲 2, 3 Arranged sounds

Warning chime

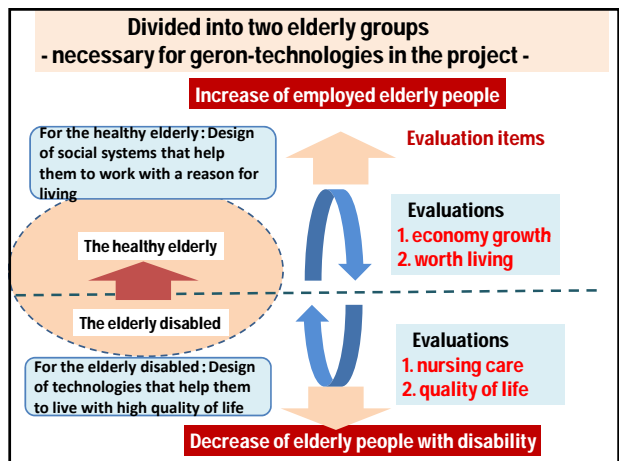
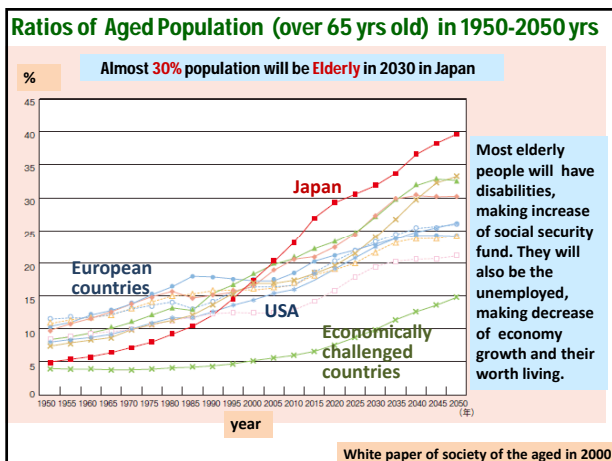
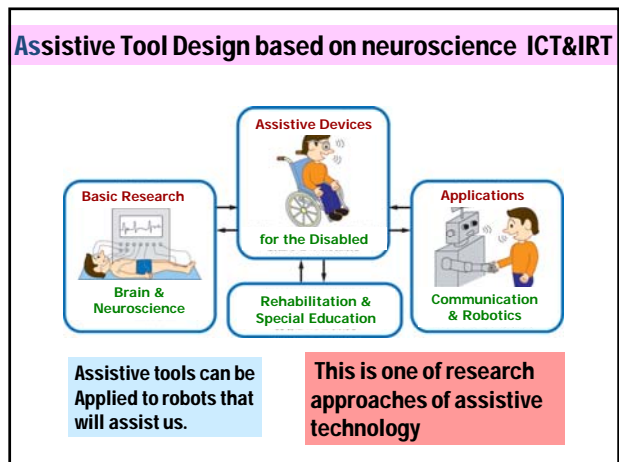
地震速報チャイムの元になった交響曲「シンフォニア・タブカーラ」
Original sound "symphony" of the chime

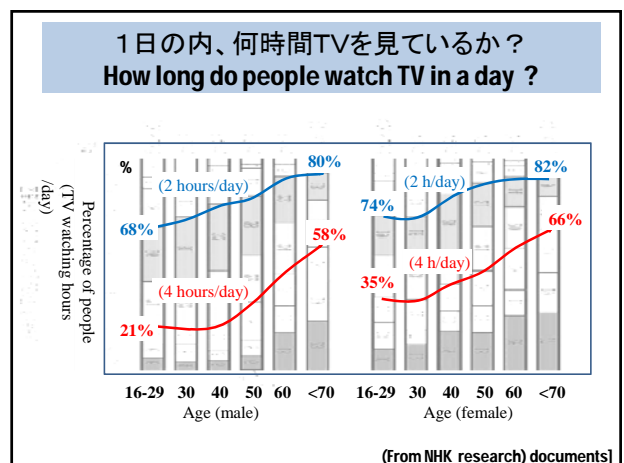
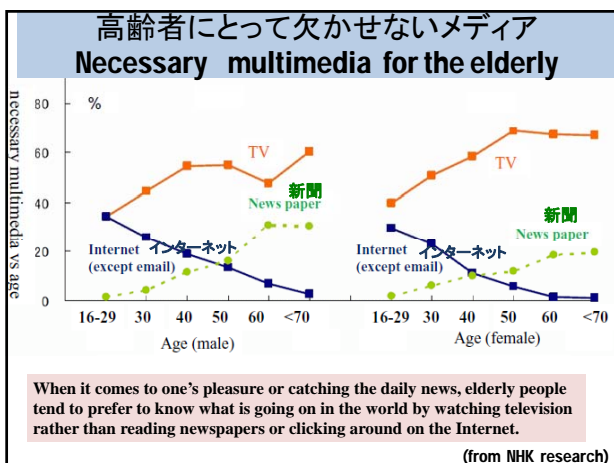
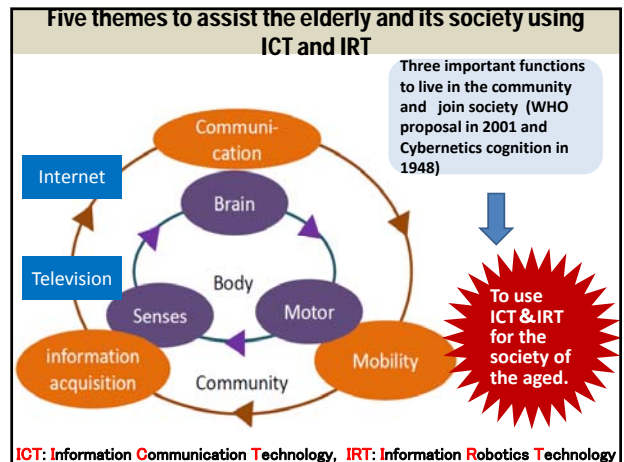
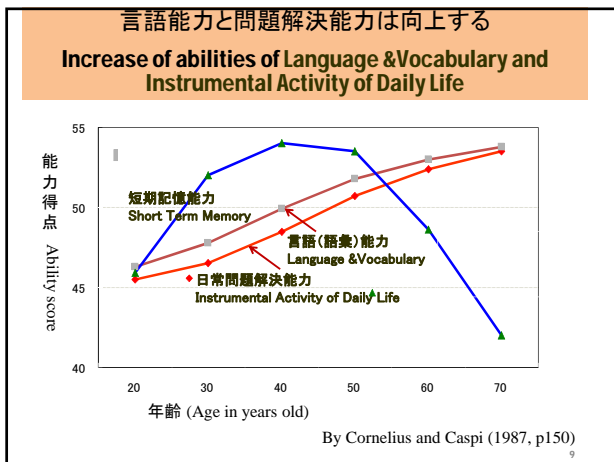
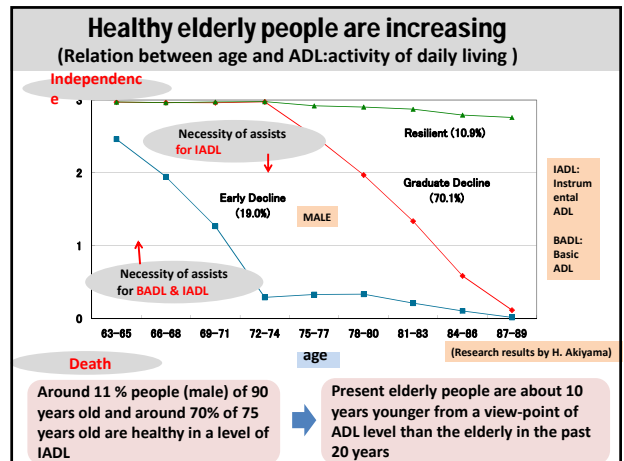
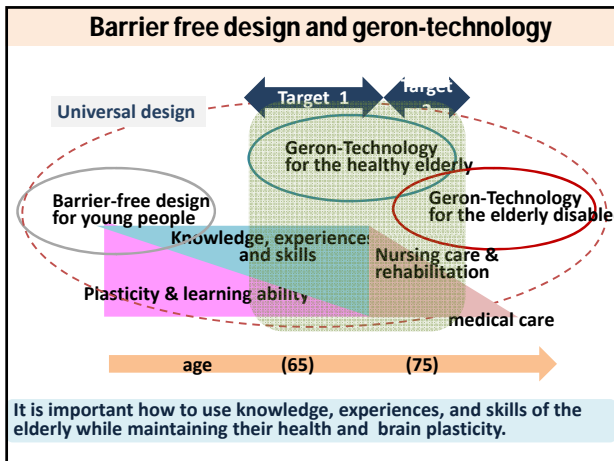
難聴者にも聞き取り易く
Composed for the hearing impaired as well as the normal

緊張感を生む
テンションノート tension note (緊張感を生む)

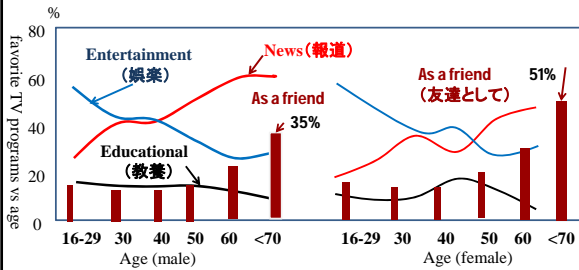
アルペジオ Arpeggio (記憶に残りやすい)

Fig. 1 upper: Selected chord for chimes, lower: Arpeggio of the chord used for chimes





人気のある番組, TVを友達として
Favorite TV programs, TV as a Friend



[From NHK research]

誰もが情報を受け取れるように
In order for everyone

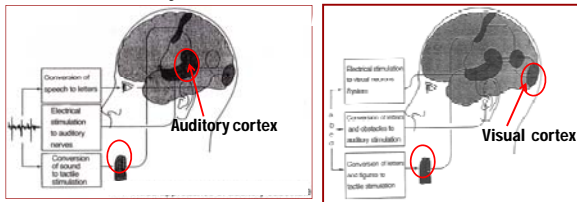
to acquire information



獲得した機能(知識・経験)の利用
knowledge & Experiences

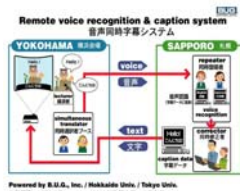
To Assist "Hearing" and "Reading" using the tactile sense.

Can Speech sounds or visual information be transmitted to auditory or visual cortex ?



- (1) To convert sound signals or visual information into tactile stimulations,
- (2) To electrically stimulate the surviving auditory or visual nerves,
- [3] To convert speech signals into letters or visual information into sound signals

通信と放送の融合で支援する
To assist people by combination of internet and TV
—「聴く」を助ける遠隔字幕システム—
remote-controlled caption system for the hearing impaired



スマートホンに音声字幕
Caption systems
for mobile phone (2004)

To assist "Reading" of texts by a Screen Reader with a tactile aid for the visually impaired



Most blind people can hear speech with three times higher speed than normal speech



In our Web reader for the blind, the blind can hear text by rapidly spoken voices while rich-texts are presented as tactile stimulation.

誰もが情報を受け取れるように
In order for everyone

to acquire information



代償機能・潜在能力の利用
compensation & potential abilities

An Example of Compensation function -obstacle sense-

Obstacle sense

First perception
↓
Final appraisal

Perception of "Existence of Something"

Most blind people can recognize some extent of objects existing around them only by hearing. This ability is called "obstacle sense"

Example of Compensation function -tactile communication by finger Braille-

Blind at 9 years old
Deaf at 18 years old

東京大学 先端科学技術研究センター
バリアフリー分野 教授
福島 智

He communicates using "finger Braille" that he first invented in the world.

"Brain plasticity" that compensates the lost functions

By the **Plasticity** of the human brain

↓

the lost sensory function can be **Compensated**

Left hemisphere

Recent neuroscience studies show that the finger-Braille information is transmitted to the visual cortex through the tactile cortex and then speech understanding cortex.

Tactile Mobile Phone for assisting "seeing", "hearing" and "speaking"

Tactile matrix display & sensor

- 1. Spatial images sensed by a camera & electric compass
- 2. Environment sounds detected by a microphone
- 3. Touching & tracing information by a finger can be transmitted to a receiver's fingertip

Five themes to assist the elderly and its society using ICT and IRT

Three important functions to live in the community and participate to the society. Based on WHO proposal in 2001 and Cybernetics cognition in 1948)

To use ICT and IRT for the society of the aged.

ICT: Information Communication Technology, IRT: Information Robotics Technology

放送・通信融合時代のテレビ (Teleda) Television for broadcasting & internet

放送局 broadcasting center

VoD TV Internet

縦のつながり vertical relation

横のつながり horizontal relation

Teleda model

パーソナル化・細分化
Personal and segmental

共有体験の提供
Sharing experience

