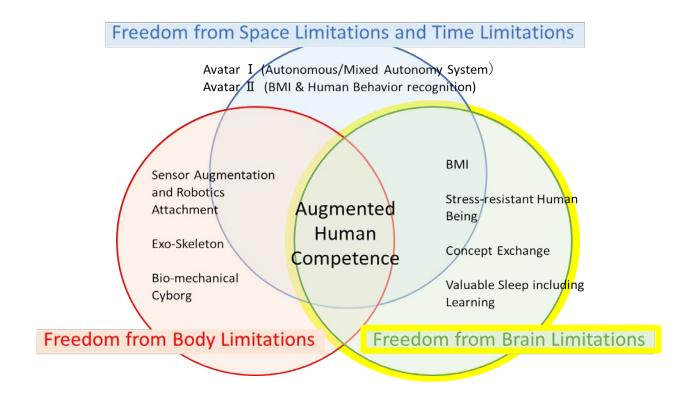


Working Group 1 Expanding human potential toward a society in which everyone can pursue their dreams

Sub-Theme
Freedom from brain limitations



Positioning of this sub-theme in WG1

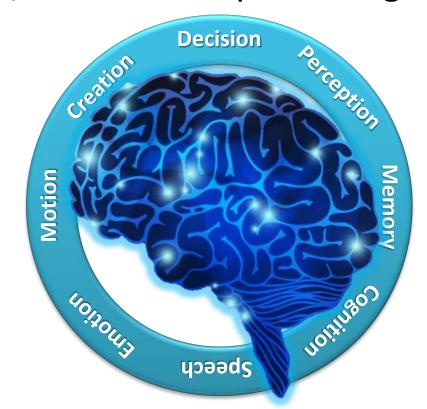




A brain, one of the super ecological computer

Weight

1.5kg



Energy Consumption

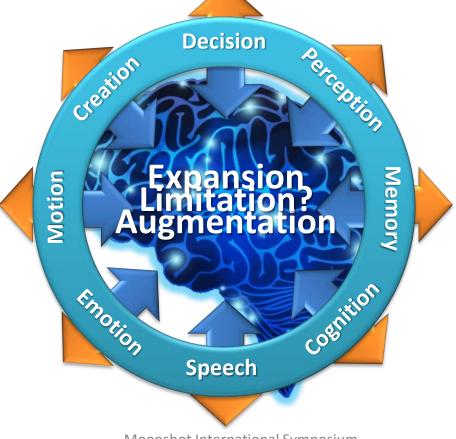
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Freedom from brain limitation

Working Population

Complexity of society



Aging society

Huge number of problem to be solved



Freedom from brain limitation cont'd

Example: For expanding the memory capacitance of the brain

-> Human created various equipment for expanding their memory



Created new culture, industry and life



Presentation - Offering of Topics

Prof. Takeo Watanabe

Fred M. Seed Professor, Department of Cognitive, Linguistic & Psychological Science Brown University



Discussion



Welcome

Prof. Norihiro Hagita
Director, ATR Norihiro Hagita Lab.
and
Chair & Professor,
Art Science Department, Osaka University of Arts



Overview of the 2 targets by WG1 (1)

Cybernetic Avatar Capitalism (C-Avatar)
for Diversity and Inclusion

New type of social structure and economy
Anybody can provide their abilities
(expertize) anytime to/from anywhere
through C-Avatar



Overcoming social divides and achieving diverse and inclusive society by creating a new kind of social structure and economy



Overview of the 2 targets by WG1(2)

Cybernetic Avatar Life

New type of myself (Another myself)

Anyone can improve their abilities through C-Avatar and can challenge to various kind of activities in Society 5.0 world.



Improving QoL by supporting creative, spontaneous activities such as recreational hobbies, travel, volunteering, art and entertainment, as well as everyday life at home



Expanding of the brain abilities

Decision
Creation
Motion
Emotion
Speech
Cognition
Perception
Memory
...

Expanding
the brain abilities
by dramatic
technology challenges

C-Avatar Capitalism for Diversity and Inclusion

C-Avatar Life

Brain Analysis Modeling

Brain Related
Researches

Sensor Devices Mechatronics



Brain related research roadmap

Freedom from Brain Limitations

Bxl - Interface for capturing and stimulating from/to brain information

Compact and light weight lowinvasive or non-invasive Bxl sensors and devices realizing wireless and long-term/range communication with instruments outside of human body

Decoding and Comprehension technology of brain information captured through Bxl for realizing perception and actuation from/to various kind of 'Things'

Transport of one's brain information into others brain through the Bxl realizing 'Brain to Brain communication'

Advanced communication - Brain to Brain Communication -

Decoding and comprehension technology of cognitive information from brain activities at various situations and conditions of human

Development the technology to link the cognitive information and human linguistic narration Development of Real-time mutual heartful information exchange system

Stress free -Comprehending thinking and relieving stresses inside of brain-

Establishing computational models of various kind of brain functions like cognition, decision making and emotion in the brain at the level of brain functional areas, and analysis of the effect of many kinds of stresses to the model dynamics

Elaborating computational brain functional model at the level of brain functional circuits for its utilizations Achievement of human stressfree performance using appropriate brain sensing and stimulation based on the fine computational model of human brain function

Novel society -Augmenting human social abilities in the singularity era

Development of the technology to analyze simultaneously all human brain function in a group Elucidation of personal properties in large scale human group and the finding the condition in which human can realize the maximum performance Design and construction of human life space including room, house, town and country in which human can be alive comfortably and do easily best performance



CONCLUSION