The Spiritual Machine:
A SF Prototype

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Overview of the Presentation

1. About the authors

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3. The SFP – The Spiritual Machine

4. Summary and Implications

5. Future Directions and Discussions

About the Authors

Hsuan-Yi Wu (Jen)-Delta Electronics
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A chance discussion about
films such as "*Blade Runner*", "*Cyborg She*"
and the "Thirteenth Floor" (to name but
some) and a collaboration on reviewing
Johnson's book "*Science Fiction
prototyping: A Framework for Design*"
*ended up in many hours of fascinating
conversations and an* instant and enduring
friendship – the beginning of this SFP!

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Where did the story come from?

- The phenomenon of technology addiction and mental disorders
- The science and technologies
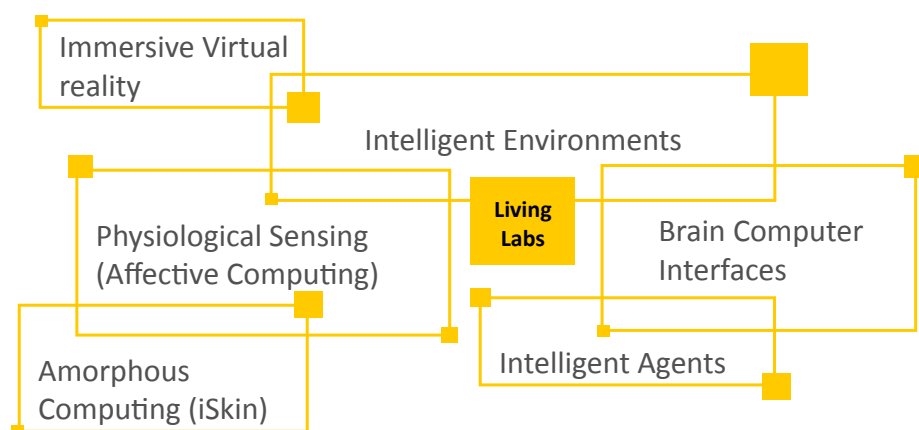- The spirituality
- The future

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The World in 2050.

What will the environment, social activities, lifestyles, and the interaction between people, technology and society be like in the world of 2050?

Technologies & the Society

Immersive Virtual reality

Intelligent Environments

Physiological Sensing (Affective Computing)

Living Labs

Brain Computer Interfaces

Amorphous Computing (iSkin)

Intelligent Agents

Hsuan-Yi Wu, "Social Innovation of Living Labs: Multi-case Studies of Living Labs in the UK", MSc Thesis, Manchester Business School, the University of Manchester, 2010, supervised by Prof. Ian Miles

1. Could we love technology too much?

Its conceivable that future technology could lead to people literally falling in love with humanoid robots (ie technology), in the same way as people from different races fall in love with each other. Of course love feeds our spiritual being, taking us to the heights of bliss when it works, but dragging us down to depths of despair when it fails.

2. Why so much pressure?!

"A child born today in the United Kingdom stands a ten times greater chance of being admitted to a mental hospital than to a university... This can be taken as an indication that we are driving our children mad more effectively than we are genuinely educating them. Perhaps it is our way of educating them that is driving them mad."–R.D. Laing, British psychiatrist, 1927-89)

iED

3. Immersive illness (mental health)

"As Immersive Education and other forms of personal virtual reality become more realistic and compelling various forms of "immersive illness" (such as addiction, alienation, and mental schisms) will become more common and more difficult to deal with. This is a relatively minor issue today because of the limitations of today's computers and networks, but what about tomorrow? What impact will truly realistic, media-rich virtual reality have on society? The Immersive Education Initiative is preparing for the future by defining best practices and early-warning systems for identifying and addressing mental health issues related to immersive virtual reality." (source: http://immersiveeducation.org/about.html*)*

4. Internet Addiction

Destructive Internet addiction – *"Internet addiction recognized as 'an illness' (where) some people can become addicted to the Internet, spending excessive time online playing games, viewing pornography and doing e-mail ... The Internet is becoming many young people's fake "best friend," and some begin to withdraw from the real world. This affects their relationships with family, friends and community ... - NABILAH WAN, Tokyo*

Internet addiction disorder (**IAD**) – *"more broadly, Internet overuse, problematic computer use or pathological computer use, is excessive computer use that interferes with daily life ... IAD was originally proposed as a disorder by Ivan Goldberg, M.D., in 1995"*

Otaku – *"is the honorific word of Taku (home) is extremely negative in meaning as it is used to refer to someone who stays at home all the time and doesn't have a life (no social life, no love life, etc) and pass the time by watching anime, playing videogames, surfing the internet"*

Internet Addiction Test – *"is the measure of addictive use of the Internet (that was) developed by Dr. Kimberly Young (and) is a 20-item questionnaire that measures mild, moderate, and severe levels of Internet Addiction"*
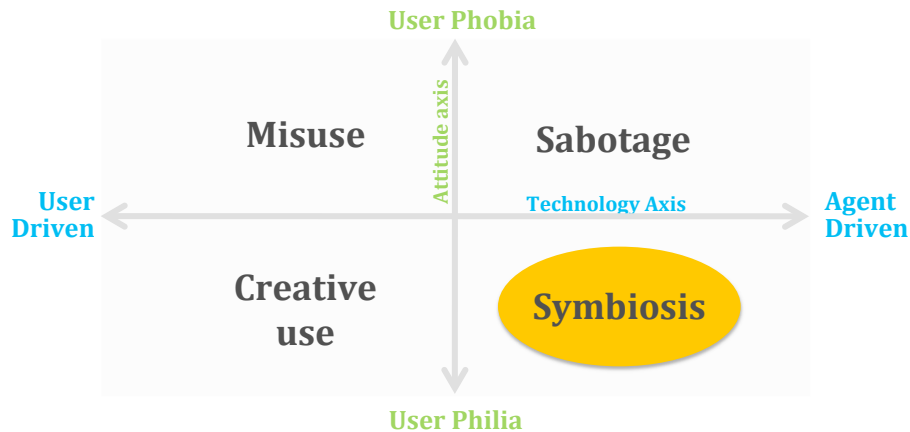
OCTD (Obsessive-Compulsive Technophilia Disorder)

5. A Socio-Agent Framework
(For describing attitudes to technology)

User Phobia

Attitude axis

Misuse

Sabotage

User Driven ← Technology Axis → **Agent Driven**

Creative use

Symbiosis

User Philia

Callaghan, Clarke, Chin 'Some Socio-Technical Aspects Of Intelligent Buildings and Pervasive Computing Research', Intelligent Buildings International Journal, Earthscan, 1:1 (2009)

[Additive Technology iSkin]
iSkin - Smart Paint for smart homeowners

Join the technology revolution; turn any surface into an interactive intelligent surface

iSkin paint contains millions of nano-agents (microscopic computers) each containing programmable sensors and effectors that can function as video displays, audio transducers, touch, light, heat and pressure sensors.

Paint **iSkin** on the walls of your room and create a immersive reality chambers

Select from thousands of **iSkin** Apps in the **iSkin** market including our popular Wonderhome-3, for making immersive reality rooms

iSkin are simple to program using special electronic brushes that inject 'Smart-Apps' directly into the nano-agents

iSkin Use the latest nano-agent technology with integrated:
- Think-Fast© - Quantum processor
- Tender-Touch 4.2© - Haptics
- Spirit 8© - Personality Engine
- My-Eyes 6.1© - 3D Media
- Real-Love 4.2© - EmotionWare
- GalaxyiNet 2© - Communications

Additive Technology, Bank Tower Bldg, 205, Tun Hwa North Rd, Taipei, Taiwan

The Spiritual Machine

"There is always some madness in love.
But there is also always some reason in madness."
- Friedrich Nietzsche, German philosopher
(1844 - 1900)

Characters

Professor Karsin

Master Sheng Yen

Deirdre

Frederick

Dr. Chang Shin

Year 2020
- **Deirdre**: MIT student, aged 20.
- **Frederick**: a professor at MIT, aged 45.
- **Prof. Karsin**: a professor at Essex, aged 58.
- **Dr. Chang Shin**: the founder of Additive Technology, aged 35.
- **Master Sheng Yen**: a Buddhist monk, a religious scholar, and one of the mainstream teachers of Chinese Chan Buddhism. (1930-2009)

The storyline of the SFP- The Spiritual Machine

3.1. The World in 2050

A Japanese psychologist- OCTD (Obsessive-Compulsive Technophilia Disorder)

By 2050, 10% of all deaths were caused by OCTD related disorders.

3.2. The 50th International Conference on Intelligent Environments - IE"54

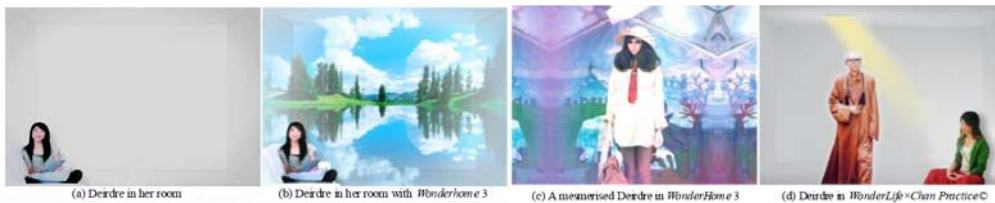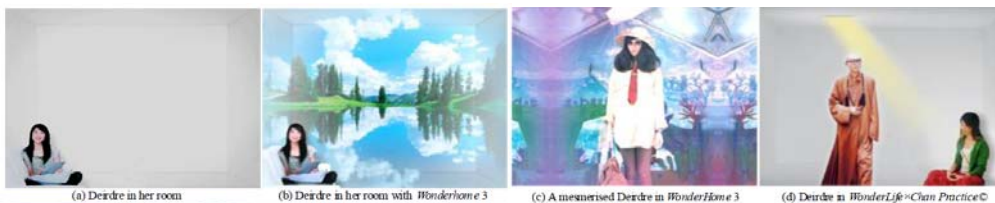| Prof. Karsin | Additive Technology | Dr. Chang Shin | Master Sheng Yen |

3.3. The WonderHome

| Prof. Frederick | Deirdre | WonderHome | *WonderLife-Diary©* |

3.4. The Obsessive-Compulsive Technophilia Disorder (OCTD)

(a) Deirdre in her room — (b) Deirdre in her room with *Wonderhome 3* — (c) A mesmerised Deirdre in *WonderHome 3* — (d) Deirdre in *WonderLife×Chan Practice©*

The storyline of the SFP- The Spiritual Machine

(a) Deirdre in her room — (b) Deirdre in her room with *Wonderhome 3* — (c) A mesmerised Deirdre in *WonderHome 3* — (d) Deirdre in *WonderLife×Chan Practice©*

3.4. The Obsessive-Compulsive Technophilia Disorder (OCTD)

3.5. The Spiritual Machine is born

| WonderHome | Buddhism Chan Practice | *WonderLife-ChanPractice©* |

3.6. The Spiritual Machine Awakens
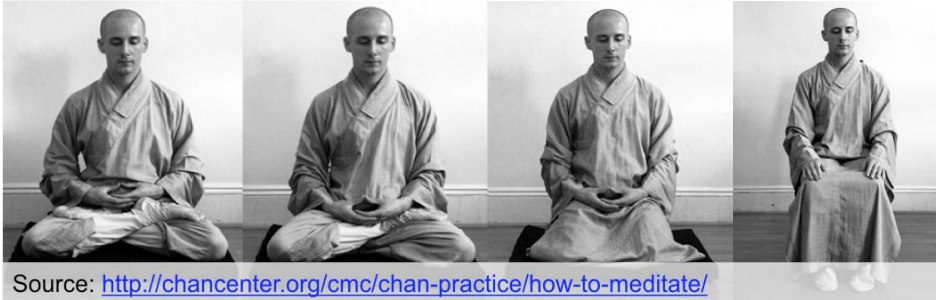
Deirdre was healed by the spiritual machine

3.7. Epilogue - Back to the IE"54 conference

It's all about love!

The Spirituality
Buddhism Chan Practice

Source: http://chancenter.org/cmc/chan-practice/how-to-meditate/

- **Chan 禪 = meditation = enlightenment = enlightened mind**
- The goal of Chan is to attain enlightenment, realising "the ultimate truth", which means mind, original nature, or Buddha-nature.
- "*The Two Entries and Four Practices*" ---Bodhidharma, 500C.E.
- Benefits: improvement of positive emotions, treatment of diseases such as Neurosis, Gastric hyperacidity and hypoacidity, Insomnia, Chronic constipation, and High blood pressure

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The Science - Essex Research Projects
**http://ieg.essex.ac.uk**

Shen L, Callaghan V, Shen R, "Affective e-Learning in Residential and Pervasive Computing Environments", *Journal of Information Systems* (Vol 10 No. 3, October 2008), Springer Netherlands, ISSN 1387-3326

Davies M, Callaghan V, Shen L "*Modelling Pervasive Environments Using Bespoke & Commercial Game-Based Simulators*" 2nd International Conference on Life System Modelling and Simulation (LSMS'07) Shanghai, China, September 14-17 2007
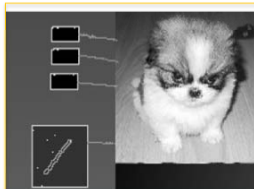
A.M.King, V.Callaghan, G.Clarke "*Using An Amorphous Computer For Visual Display Applications In Intelligent Environments*". Intelligent Environments 2008, Seattle, USA

D. Pavel, V. Callaghan and A. K. Dey , "*From self-monitoring to self-understanding: Going beyond physiological sensing for supporting wellbeing*", MindCare 2011, Dublin, May 2011

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Summary and implications

- Technology vs. Spirituality
- We postulated that even though new technology can empower to people, there are dangers that too much dependence on it could undermine human wisdom and people's ability to deal with their relationships and personal affairs in life.
- In our story we have likened our Spiritual Machine to a "*technology vaccine*"; using technology to cure technology induced problems (in a similar way that using biological variations of an infecting disease can cure a disease)! However, from the teachings of Chan practice it seems that, in the end, human beings should still count on the spiritual power from within themselves, and that such mediation will always best be conducted by people.

Future Directions and Discussions

- Can the forces of technology and spirituality be balanced in modern life?
- Will the day ever come to pass when advanced robots would need to use our Spiritual Machine?
- The next hot topic of computing?
  The "Spiritual Computing"?

Thanks for your attention!

We Welcome your Questions.

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