



University of Essex



# Micro-Futures

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## About Me

- ▶ Professor of Computer Science at Essex University
- ▶ Member of Intelligent Environments Group and Digital Lifestyles Centre
- ▶ Worked in avionics (aircraft) before joining university system
- ▶ Specialist in robotics and artificial intelligence (founded Robotics at Essex in late 80's, IE in late 90's)
- ▶ Current research focused on Embedded-Agents, End-User Programming, Affective Computing & Mixed Reality.
- ▶ Part of organizational team for numerous conferences, workshops, journals



### *the campus*



<http://victor.callaghan.info>

- Parkland of 200 acres
- Royal Charter in 1965
- 12,240 students
- 27% post graduates
- 40% overseas (130 countries)
- Ranked 9<sup>th</sup> in UK for research
- Ranked 2<sup>nd</sup> for student satisfaction



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## Overview of Talk

“The motivation of this paper is to introduce **micro-fiction** as a methodology for capturing and communicating visions for scientific, business and societal innovations”. To those end, **The Technological Singularity** is described and used as a means to illustrate the workings of **Micro-SFPs**

- ▶ Section 1 – about Micro-SFPs
- ▶ Section 2 – about ‘The Singularity’
- ▶ Section 3 – about the stories
- ▶ Section 4 – reflections



## Science Fiction Prototyping (SFP)

- ▶ *Science-fiction Prototyping (SFP)* is a product-innovation methodology that uses science-fiction imagery and narratives as a tool to communicate and explore ideas for new research, business models or product opportunities.
- ▶ Works by *extrapolating forward in time*, *directions for R&D* (and potential product outcomes) and *testing the viability* (or attractiveness) of the ideas by couching them in a *social context* provided by the *narrative* or *imagery*.



SFP devised by Brian David Johnson

## Some Pros & Cons of Traditional SFPs

### ▶ Pros

- Stories are size of a paper thereby enabling prototypes to be well developed and tested.

### ▶ Cons

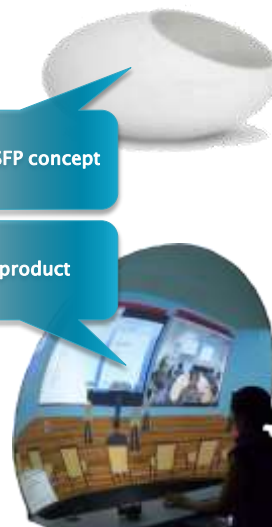
- Take considerable time to write, obstructing creative activities with limited time.

### ▶ Consequences

- Gave rise to shorthand genre – micro-SFPs

From this SFP concept

To this product



## Types of Micro-Fiction



### 6 Word

- ▶ **"For sale: baby shoes, never worn"** – Ernest Hemingway (who, according to science fiction writer Arthur C. Clarke, bet he could write a complete story in just 6 words starting this genre!).

- ▶ -----
- ▶ "Lie detector eyeglasses perfected: Civilization collapses." – Richard Powers
- ▶ "TIME MACHINE REACHES FUTURE!!! – nobody there" – Harry Harrison

- ▶ No agreed specification; Range from 6 to 1000 words; Popular size 25–30, words.
- ▶ Similarities to *fables*, *parables*, *anecdotes*, *sayings*, *proverbs* and *maxims*
- ▶ English speaking world called *micro-fiction*, *nano-fiction*, *flash-fiction*, *sudden-fiction* or *postcard-fiction*
- ▶ Around the world called *microrrelato* or *ficcione* (Latin-America); *nouvelles* (France); *minute-long* or *smoke-long* (China); *Haibun* (Japan)

- ▶ Technology based – *Mobile-phone* (Ketai) fiction (160 characters ~30 words); *'Twitter Lit'* (140 characters ~25 words)

- ▶ Examples can be found at

- *Wired* (6-word) - <http://www.wired.com/wired/archive/14.11/sixwords.html>
- *Espresso Stories* (25 words) - <http://espressostories.com>
- *Micro-SFPs* (Twitter-size) - <http://www.creative-science.org/activities/microsfp/>

This is the style  
Micro-SFPs adopt

## Micro-SFP Examples: 6 Paragraph

### ► Purge (81 words)

1. "Objects are more than physical, you know? They take up mental space too."
2. He stopped to wipe his eyes.
3. "Tania was more than physical to me. Even when she's gone I close our bedroom door lightly as if she sleeps..."
4. "I walk down the sidewalk with room for two."
5. A technician nodded slightly, and placed the device, cold and metallic, across his reddened forehead.
6. "You can't live your whole life with an empty room in your head, you know? Do it."



### ► Reflection (185 words)

1. The door opened to reveal a giant, circular room. Floors black, walls black. In the centre there was a pulsing light that illuminated the tiles of the floor. He stepped inside the threshold.
2. "Chris Arlen." He calmly directed his voice at the floor.
3. The tiles on the floor flickered until their glow was consistent and growing. In front of him the three-dimensional image of a young man materialized. He was all there, digitally.
4. As he stared at the hologram of Chris, slowly turning with animated chest movements, he saw that the re-creation hadn't missed a thing. His brown hair slightly too long for his face, the sneakers he should have thrown out, the hole in his neck below the ear that put him here.
5. He paused a moment, looking at that hole, and suddenly felt the weight of the gun in his holster. Guilt and shame rushed from his finger tips to his temples. It smouldered there. "I'm done in here," he shouted to the attendant outside the room.
6. "You have another thirty minutes before this reflection period is over, officer," a synthesized voice returned.

<http://scifiinsix.tumblr.com/>

## The Singularity

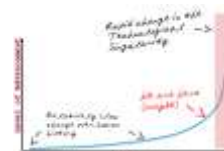
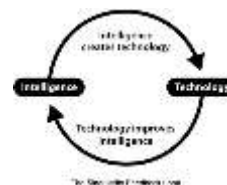
- The Singularity .... *the moment machine intelligence exceeds human intelligence* (around 2050 according to Kurzweil)



... Might be brought to fruition as outcome of *whole brain emulation, transhumanism* or an *intelligence explosion!*

## Singularity Mechanisms

- ▶ Arrival of singularity would have profound consequences for humankind
  - From a positive viewpoint, people would have powerful analytical tools
  - From a negative perspective, human existence would have competing greater intelligence!
- ▶ Generally, there are three main ways that people imagine a singularity might be brought to fruition
  - **Whole brain emulation** – refers to building an artificial version of the brain (eg a software simulation)
  - **Transhumanism** – refers to augmenting (massively) human intellectual and physical capacities by the use of add-on or replacement parts.
  - **Intelligence explosion** – based on acceleration theories where one could imagine ever smarter tools making even smarter tools resulting intelligence explosion
- ▶ To distinguish *singularity AI* from current application-specific AI, is referred to as *Artificial General Intelligence (AGI)*.



## Writing a Micro-SFP

- ▶ **Micro-SFPs (25 word)**
  - Uses Twitter / Mobile Phone sized fiction (140 /160 characters)
  - Should **focus on some technology** (eg machine, gadget, etc)
  - Need to include an **action to illustrate its use**,
  - **Include a person** (indirect references are ok)
  - All framed in a **simple (if partial) narrative**, as in any story.
  - Start by identifying the technology, then the plot. Start big, then reduce it to <140 characters
  - Simple writing procedure
    - Start by identifying the technology, process or service,
    - Then create a plot.
    - Start big, then reduce it to <140 characters



### Johnsons 5-step SFP Process

1. Selecting the product (or service) and building an imaginative world,
2. Identifying a product (or service) inflection point,
3. Analysing the ramifications of the product (or service) on people,
4. Identifying a human inflection point, and
5. Reflecting on what was learnt.

## Micro-SFP Examples: Whole Brain Emulation



- ▶ **Death is optional** – *Dr Xu spoke compassionately to Mei “its terminal but, if you can afford a Resurrection13 scan, we can rebuild Lei & you in SimHeaven”.* (24 words, 132 characters)
  - Implies two types of technology, a very advanced scanner (the Resurrection13) that is capable of capturing detailed workings of the brain (physical, electrical, chemical and biological) and an advanced virtual-reality technology (SimHeaven) that can use this to reconstruct simulations of people that are indistinguishable from their original self. Assumes convincing simulation of wider environments & raises the issue of cost; those with money can become immortal, those without die!
- ▶ **Make Up** – *Amy, you look and sound dazzling, Ben will fall in love instantly; yeh, amazing what PersonaShop3 can do for a girl!* (21 words, 115 characters)
  - Imagines that blended reality is in widespread use (eg more advanced versions of Google glasses) offering whole range of new affordances which would seem like magic in our world. Describes a new type of ‘make-up’ set, PersonaShop3, which allows the user to alter aspects of their own appearance and persona.
- ▶ **Existence** – *Zoe, you’ve been my life-long friend on SentiBook; today the news feed reports most social network friends don’t exits, are you real?* (22 words, 133 characters)
  - Imagines point where AI has ability to masquerade as people, either openly or surreptitiously opening up intriguing, if disturbing consequences for human society and relationships.

## Micro-SFP Examples: Transhumanism



- ▶ **Smart Friends** – *So, old friend, you finally replaced your wet-brain with a FreeWill3 quantum unit; yeh, & I'm replacing old friends with smarter ones!* (22 words, 134 characters)
  - Implies that free-will is an important characteristic of people & might need a different type of computing (quantum). The story also raises the issue of whether augmenting the body and mind may lead to less stable social relationships
- ▶ **Clone World** – *Tom, this morning mend the cooker, take the kids to play land & go to work. Yes, dear we will do that!* (21 words, 101 characters)
  - Raises possibility that spare-part replacement might not just lead to creating single clones of people but multiple identical clones (three in this case allowing John at least three times the amount of work. Where would this stop, how would those clones be managed and how (and would) their experiences to integrated to maintain a single super-person?
- ▶ **Upgrade** – *Max read the side-effects warning on the mental-arithmetic upgrade nanobot-pills; “some users report reduced emotional behaviour”* (16 words, 129 characters)
  - Ponders whether if change one part of our physical or mental make-up, it will have side-effects on other aspects of our being. How will such changes affect our lives and wider society? How will such augmentation be supplied and regulated.

## Micro-SFP Examples: The Intelligence Explosion



- ▶ **Viral Intelligence** – *Jane's sleepy eyes said it all, another smart home with a viral-intelligence infection, call the singularity exorcists!* (17 words, 119 characters)
  - Explores possibility intelligent environments may be susceptible to super-intelligent viral agents that migrate, evolve and mutate and take on a form of evolving sentient ghost-like presences (possibly displaying combinations of benevolent, mischievous or malicious behaviour as found in people!)
- ▶ **Collective Consciousness** – *Silently Zac prayed for inspiration; thanks to his SentiNet brain implant from the 7<sup>th</sup> Day Evangelists, his prayers were soon answered.* (21 words, 134 characters)
  - Imagines time when brain interfaces are commonplace commodities linked by to create a type of crowd sourced super-intelligence and an artificial form of connected consciousness that is analogous to telepathy.
- ▶ **Upgrade** – *Sentinet is down again! Be warned wise reader, the Singularity will be preceded by an unprecedented torrent of upgrades!* (19 words, 121 characters)
  - Makes a literal interpretation of the intelligence explosion; seeing it as a rapid cycle of improvements (upgrades) signalling the onset of a massive intelligence explosion. In doing this it questions, implicitly, how will the singularity happen, what might be the signs?

## Summary

- ▶ Micro-SFPs provide simple tool to capture and communicate ideas about the future.
- ▶ Compatible with Twitter or phone texts (140 characters or 25 words).
- ▶ Small size is challenging but focuses writers on most essential elements.
- ▶ Used “*The Technological Singularity*” to present 9 examples of micro-SFPs relating to areas
  - Whole brain emulation
  - Transhumanism
  - Intelligence explosion





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That's it!



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