Science Fiction Prototyping

and its relevance to language and interpreting students

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Outcome of Session

- This lecture aims to introduce you to Science–Fiction Prototyping (SFP), a creative-thinking method that is used for product innovation, threatcasting, language learning and motivating students to study STEM topics.

- Outcomes include:
  - Appreciating the importance of creative thinking.
  - Understanding the SFP method.
  - Awareness of SFP applications (including languages).
Structure of Lecture

- The Importance of Creativity
- The Science Fiction Prototyping method
- Some Examples of SFP Applications
- Q&A

Why creative thinking is important?

- The challenge to companies is how to avoid being sidelined by new innovations, or how to produce their own innovations. One solution is to employ creative-thinking methods, to augment other technical skills.

Examples: Kodak, Nokia

- Innovations come from Creative Thinking

- To get an 'edge in life', we all need to be able to think creatively!
What is creative thinking?

- Creative thinking, is thinking about problems in a new way, or thinking of new ideas which can lead to novel products or solutions. [Oxford Dictionary]
- Imagination is a key ingredient of creative-thinking.
- “Imagination is more important than knowledge. Knowledge often defines all we currently know and understand. Imagination points to all we might yet discover and create” [quotation by physicist Albert Einstein]
- “Creativity distinguishes between a leader and a follower” [quotation by Steve Jobs]
- Science–fiction prototyping is a powerful creative thinking tool.

The Science Fiction Prototyping Method

- Science–Fiction Prototyping uses fictional stories to inject imaginative leaps into the innovation process. It provides a rich virtual world to help explore the possible implications of technology on people, societies, and the world at large. It also provides a shared language to allow all the stakeholders of the future to engage in dialogue.
Introducing new chips takes Intel 7–10 years from concept to shipping (with 15 years of product life)!

How can they specify chips for worlds that don’t exist?

The main Intel resource is engineers (but traditional engineering education encourages structured & incremental thought!)

Intel decided the magic ingredient was imagination

The Intel solution was to ask their engineers to write fictional stories about technologies they are working on, to inject imaginative leaps in their thinking!

SFP uses short stories about the future to inject imaginative leaps and provide a shared language for innovation.

www.creative-science.org

see more detail on http://victor.callaghan.info/history/csf/
Science Fiction Prototypes (SFPs)

- Are simply stories describing a future (and an innovation) you would desire.
- Written to persuade people to buy into your innovation (through credibility & emotion)
- Loosening the remit from ‘the likely’ to ‘the possible’ allows leaps & disruptions to be addressed
- Two types of SFP
  - Micro-SFP (µSFP): a very small SFP
  - Macro-SFP: a large SFP
- As part of this activity you will create an µSFP

µFiction (Micro–Fiction)

- No agreed specification; Range from 6 to 1000 words; Popular size 25–30 words (text message size!).
- Similarities to fables, parables, anecdotes, sayings, adages, 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/
Writing a µSFP

µSFP components
1. User
2. Innovation (technology / service / process)
3. Event
4. Benefit

Twitter / SMS sized fiction (140 / 160 characters – 25 words)

Simple writing procedure
1. Name a user (use a very short name eg Joe)
2. Identify an innovation (technology, process etc)
3. Then create an event that illustrates the use and benefit of
   the technology, process or service (should include an
   inflection point)
4. Start big, then reduce it to <140 characters / 25 words

Simple µSFP template

Examples – µSFP (text size 160 characters, 25 words)

Jack fall asleep in the sun. His smart sun protection sensor woke him up with an alarm & soft vibration. He avoids sun strokes!

Amy can’t diet but her bracelet helps stop her eating a naughty treat over a salad. It clamps tight on her wrist & shocks her.

OMG where did u get ur coat from? It was the only one left in the store. But I can 3D-print it 4 u. Thank u so much.

With my new eFridge I can have my cake & my stay at home. I come home 2 a full stock of food & no court orders for a drunkard.

I’ll just pop off to get some sushi. Bob established a wormhole link to Japan and vanished.

http://www.creative-science.org/activities/microsfp/
Mini-SFPs

- Are bigger, multi-page versions of µSFPs
- Being bigger allows them to:
  - Describe the technology or business processes in more details
  - Create more realistic and credible characters and contexts (i.e., be more accurate and reliable prototypes)
  - Better engage the various stakeholders
- In contrast to µSFPs, they require more time to write, so are used later in the product development cycle, when the ideas need to be tested or communicated to key stakeholders.

For more information see: https://en.wikipedia.org/wiki/Science_fiction_prototyping

Mini-SFPs

- Size – 4–12 pages (much larger than µSFPs).
- Structure (12 page version)
  - Introduction (half a page)
  - Background work (1–2 pages) discusses the factual aspects and how they relate to the story (including any references).
  - Fictional Story (9–10 pages) which illustrates describes and tests (exercises) the vision for the new technology, business or socio-political system.
  - Short summary (half to one page, say) that provides an overall comment (reflection).
  - References should be included at the end of the paper.

Some Examples: http://dces.essex.ac.uk/Research/iieg/CS2011.htm
Process Starts with Ideation Session

- Brainstorming
  - Form groups with odd number of people (eg 3, 5 or 7)
  - Elect a coordinator & scribe (to record ideas)
  - Choose an innovation focus (interpreting technology)
  - List as many ideas as possible (chose quantity above quality)
  - Do not worry about practicality of ideas
  - Don’t criticise ideas (out of the box thinking is encouraged)
  - Offer new ideas, plus build on other members ideas

- Discuss & prioritise ideas

- Create µSFP

Cross-Impact matrix used to focus discussions

- Consists of list of emerging technologies and aspects of interpreting
- X-matrix table used to consider what happens when one of those trends is applied to interpreting: how might they impact interpreting practice?

Significant moments of scientific disruption include – The Technological Singularity … the moment machine intelligence exceeds human intelligence (around 2050 according to Kurzweil)
Grounding stories in the possible

<table>
<thead>
<tr>
<th>Future Technology</th>
<th>Current Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initial Brainstorming leads to SFP</td>
<td>2. SFP edited by engineers to what is possible now</td>
</tr>
<tr>
<td>3. SFP editing by senior management to align with static goals.</td>
<td>4. SFP edited by sales marketing team to reflect market needs</td>
</tr>
</tbody>
</table>

- Ideation Grounding Spirals – All work in same way; ideas passed around expert group, refining product innovation to fit company capability and market

- References:
  - Brian David JOHNSON "Science Fiction for Scientists (Intel’s ‘Expanded Consumer Experience Architecture’)", Creative-Science 2010. Kuala Lumpur, Malaysia. 19th July 2010

Example for Interpreting – Smart Glasses

- Chantel Dan Chen was investigating the use of smart glasses as an aid to interpreters
Intel imagined that the next big disruptive technology (after smart phones) would be domestic robots. Started an open innovation project called the 21st Century Robot.

**Two Chinese Stories**

- **Sunfed Fashion** – top selling professional women's fashion-wear uses SF/Fantasy to inspire new designs embedded in popular culture (which aids marketing)
- **Dali Cashmere** (founded in 1996, 180 employees, turnover US$4 million) – High-tech manufacturer of cashmere used ideas from 'Transformers' to create a flexible production facility and ideas from '1984' to manage remote operations making it 8 times more productive than competitors.

*Copy of paper available free until 27th March from publishers at: https://authors.elsevier.com/a/1WW6H3jdjPFo2*
The Tsinghua University Press Story

Details
- CSf Website: http://www.creative-science.org/activities/book1/
- Author: Shumei Zhang, Vic Callaghan, Hongmei Wang, Bin Hedong
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- Adopts a novel approach to teaching English as a foreign language by combining:
  - Language learning
  - Creative thinking and writing
  - Technology

- A new approach to teaching that integrates digital literacy and science fiction into elementary school settings
- Combines elements of constructivist teaching methods, Science Fiction Prototyping (SFP), the exquisite corpse model of collaborative engagement and social media to engage young learners
- Proposes a new platform (web and mobile phone app based) called MySciFiStory.com that aims to combine these approaches to benefit elementary students and educators.
- Concept proposed by Creative Science Foundation and refined into pedagogical model by masters students at San Diego State University.

For paper introducing the ideas see:
The Dream Academy Story

- This is a venture aimed at supporting children (plus parents and their communities) escape the poverty trap through attracting them into science and engineering education.
- Works by getting them to write science fiction stories about better futures they imagine and building some of their visions using low cost physical paper/cardboard prototypes.
- The strategy has been successfully tested with Mexican children in the slums of Leon (a large Mexican city).
- Started with ‘Dream Mexico’ but aims to work with other countries ...

http://www.creative-science.org/activities/dream/

That’s it!

"How do we change the future?  
Change the story people tell themselves about the future they will live in”  
Brian Johnson

There is a “need to bring art and science back together” (Eric Schmidt, chairman of Google

The Macintosh was so successful because the people designing it were musicians, artists, poets as well as skilled computer scientists” (Steve Jobs, founder of Apple

http://www.creative-science.org