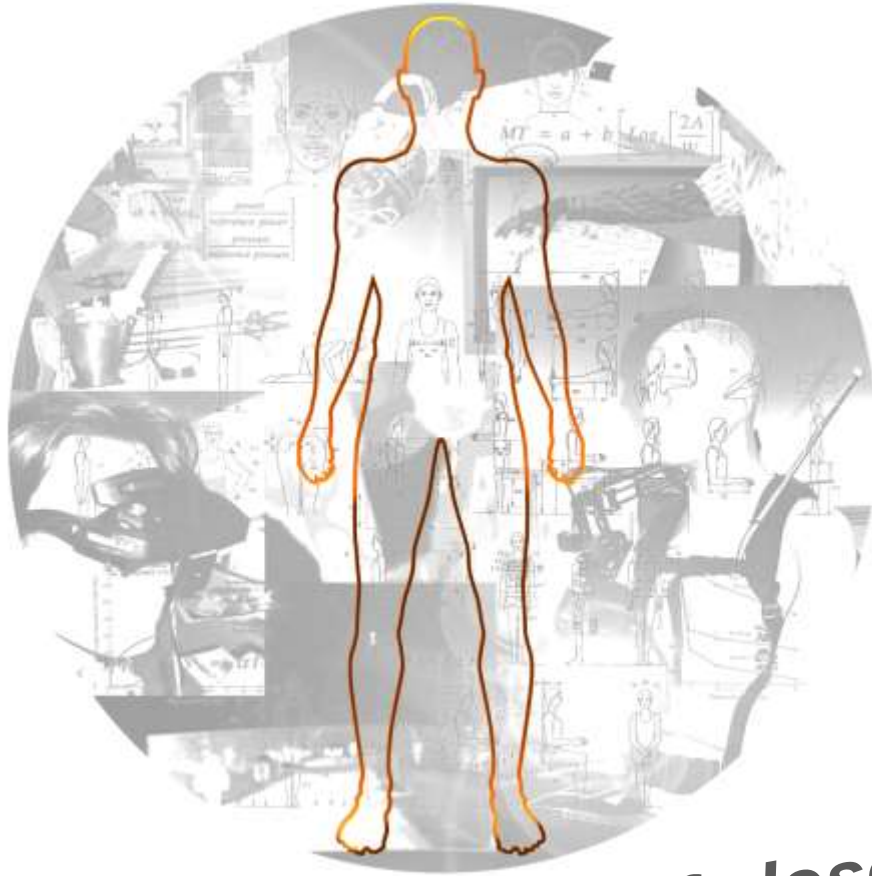


Designing The Far Future – Sci Fi Prototypes



Prof. Joseph Giacomini



Science Fiction Prototype

As the complexity of products, systems and services has grown and their development times and costs have increased, so too have the benefits of earlier prototyping.

Earlier and more contextualised approaches are being used to bring to light characteristics and implications which are not immediately obvious from the first verbal descriptions and concept sketches.

Giacomin, J. 2024, Future Autonomous Road Vehicles, Routledge, Abingdon, Oxon, UK.

Roman was a friendly neighbourhood robot of recent manufacture but was not new in the usual sense. Its chassis was intended to reassure those who had holidayed previously on human driven vehicles. More safety, more features, but a traditional atmosphere. Four larger than normal tyres promised grip. Large white frostable windows stretched from one side all the way over the top to the same point on the other side. The seats were large, soft and studded with all manner of gadgets to help pass the time. And unlike the old human driven vehicles, getting in and out was a doddle thanks to a door and steps for each row of seats. No waiting in line, no pushing and no shoving. Convenient convenience.

Science Fiction Prototype

A science fiction prototype consists of a short vignette in text, theatre play, comic or video which describes an immersive future involving physical, psychological and sociological interactions.

Giacomin, J. 2024, Future Autonomous Road Vehicles, Routledge, Abingdon, Oxon, UK.

But it was the scripting which was the tricky part. The subject of a new branch of design. Contextual awareness, in particular, was said to be where the gremlins growled and the devils did their dirty work. The child who runs to the bathroom risking a fall, the university professor who relishes rubbishing the robot's knowledge, the young couple from the other side of the world who never heard of the civilisation. A human tour guide might try to "wing it". But friendly neighbourhood robots, notoriously, don't "wing it".

Science Fiction Prototype

A science fiction prototype typically adopts narrative structures and literary techniques as part of the effort to highlight the nature of the speculated future product, system or service.

Unlike physical prototypes which are used to test form and function, science fiction prototypes help instead to test concepts and ideas.

Giacomin, J. 2024, Future Autonomous Road Vehicles, Routledge, Abingdon, Oxon, UK.

The incongruous requests overwhelmed the logic circuits and resonated the decision algorithms up and down, left and right. Not letting them settle on any fixed probability or known heuristic. If the designers had not separated the control circuits and provided crossed double driving, one more comment about a pizza would have driven Roman straight into one of Corso Bagni's ancient trees. And all Roman could do was to repeat "Please press the assistance button to contact a human operator" at ever increasing frequency in the manner of a frenzied fire alarm...

Science Fiction Prototype

Johnson defines science fiction prototype to be "...a short story, movie or comic based specifically on a science fact for the purpose of exploring the implications, effects and ramifications of that science or technology".

Johnson, B.D. 2011, Science Fiction Prototyping: designing the future with science fiction, Synthesis Lectures On Computer Science 3, Morgan&Claypool Publishers, San Rafael, California, USA.

Science Fiction Prototype Elements

Science fiction prototypes usually contain three key elements:

- Treatment of the technology;
- Treatment of the future individuals who use/interact with the technology;
- Allusions to the future social context where the technology is embedded.

Fernani, A. 2021, Science fiction prototyping, design fiction and worldbuilding, what differences?, Medium, <https://medium.com/predict/sci-fi-prototyping-design-fiction-and-worldbuilding-what-differences-ca6a5bbd189>.

Science Fiction Prototype Development

Chose A Technology,
Science Or Issue

Select a technology, science or issue which is to be explored by means of the science fiction prototype.

Establish The World Of
The Story

Establish the world of the story by introducing the reader or viewer to the people, locations and contexts.

Introduce The Scientific
Inflection Point

Introduce the specific technology, science or issue which the reader or viewer is to explore.

Explore The
Ramifications

Explore the implications and ramifications of the technology, science or issue on the world of the story.

Ask What Did We
Learn?

Describe what was learned from placing the technology, science or issue into a realistic setting. Describe what could be modified to improve the impact on humans.

Science Fiction Prototype Development

Graham, Greenhill and Callaghan have suggested that science fiction prototypes are not straightforward to produce because “...they require the developer to be both a scientific or technological expert and also to be able to write compelling fictional stories”.

Graham, G., Greenhill, A. and Callaghan, V. 2013, Exploring business visions using creative fictional prototypes, *Futures*, Vol. 50, pp.1-4.

Science Fiction Prototype Development

How to achieve narrative focus on the most important characteristics of the product, system or service is a topic of current debate.

As is the choice of characters, lifestyles, emotions and other human considerations to highlight.

There is currently only limited guidance about optimal writing style, length of narrative, depth of treatment or use of sector specific tropes.

Giacomin, J. 2024, Future Autonomous Road Vehicles, Routledge, Abingdon, Oxon, UK.

Science Fiction Prototype Usage

They provide a virtual proving ground for testing concepts long before the designs can be manifested physically.

They can be used in interviews, focus groups and other ethnographic activities to check people's needs, desires and attitudes in relation to the product, system or service of the story, particularly any concerns of an ethical nature.

And they can be used as raw material for soliciting suggestions, recommendations and co-design.

Science Fiction Prototype Usage

“...the outstanding distinction between story-led scenario planning and creative fiction prototypes is a distinction on which there seems to be general agreement. Scenario-based story telling is usually associated with a relatively short time span of up to five to ten years, while prototypes focus solely on the long-term time frames, typically ranging from ten to fifty years and sometimes even longer”.

Graham, G. 2013, Exploring imaginative futures writing through the fictional prototype 'crime-sourcing', Futures, Vol. 50, pp.94-100.

Roman

Acqui-Terme was the next stop, a sleepy cluster of 25,000 souls nestled in the Apennine foothills between Liguria and Piemonte. Now a small provincial town, in Roman times it was a large and important city where legions stopped to enjoy the thermal baths and dignitaries drank the waters before crossing the Alps. A fine first century thermal bath is still to be seen today and the remains of the aqueduct are considered to be among the finest in the region.

This day the twenty-four torpid tourists had been awoken at first light and hunger pangs were now stimulating conversations more than ancient history. Torn wrappers, empty snack bags and a rock garden of bottles and cans now cluttered the confines. The tummy rumblings sometimes synchronised with the road wheels and many of the travellers began to fidget to the fluctuations. More than one eyebrow was raised distinctly upwards like the sun which was just now visible on the horizon at the front right.

“Roman, which town is next?” asked the young chap who said he hailed from Normandy.

“Acqui-Terme is next Mr. Laurent” was the reply uttered in a somewhat news reader’s voice, “It’s approximately 50 kilometres from Genova and approximately 80 kilometres from Torino”.

“Ok Ok Ok Roman, but are we are stopping there to eat? And is the food any good? I am hungrier than a hungry thing”.

“We will be stopping at the Trattoria Della Piazza Bollente where they offer local cuisine and selected ancient recipes” was the response in a tone which had now shifted from news reader to testimonial influencer.

“Yes, yes, yes that’s all wonderful, but is the food any good for heaven’s sake?” prodded the famished Frenchman.

“Apologies, but I am not authorised to express opinions” was the rapid reply in a now reinstated news reader motif.

Stiffening his back and shaking his head, Laurent’s voice now expanded enough to ensure that his cruising companions could hear.

“Fantastic, he knows the date, style and backstory of every little artefact in every little museum, but can’t tell us if the food we are about to eat is any good”.

“Given the cost of the tour why don’t they have humans to help explain things?” was the final transmission from the now frustrated Frenchman, which terminated the conversation and dampened dispositions all through the cabin.

Roman

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But it was the scripting which was the tricky part. The subject of a new branch of design. Contextual awareness, in particular, was said to be where the gremlins growled and the devils did their dirty work. The child who runs to the bathroom risking a fall, the university professor who relishes rubbishing the robot's knowledge, the young couple from the other side of the world who never heard of the civilisation. A human tour guide might try to "wing it". But friendly neighbourhood robots, notoriously, don't "wing it".

And as they came off the viaduct and began cruising Corso Bagni they hit fresh turbulence.

"I don't recall Piazza Bollente being on the list of the stops" said one tourist in a heavy Swiss accent.

"I thought that the virtual tour said something about the Hotel Terme on the hillside" offered another.

And from one of the rows at the back someone jumped in with a brave "What if we want to eat at the Hotel Terme?" and someone else ranted about dietary needs and someone else about lactose intolerance and someone else asked a question so complex that only a dietary clinician could attempt an answer. The questions rumbled in like a summer storm rolling down an Alpine mountainside.

Roman

But Roman was not equipped to deal with such matters. Roman could point out the ancient wall at left, or read off a brief history of the Roman Empire, or note a rare bird of prey flying overhead. Facts were not usually a problem. After all, that's what computer memory is for. But dealing with opinions and societal expectations were not Roman's strong points. Like humans, Roman had blind spots. And the current verbal avalanche was parked squarely in one of them.

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And contact they did. Nearly all twenty-four of them. And at nearly the same time. An avalanche of appeals rolled into the tour operator's offices in Genova, demanding the combined energies of a row of humans sitting at identical desks, in identical cubicles, under identical energy saving lamps. A check of a tour specification here, and a check of a lunch menu there, an apology for the behaviour of the tourist of row 4 to the couple in row 5, and so on. The humans scrambled to deal with the problems of the humans. And, slowly, the humans began to choke the confusion which had been conjured out of thin air by the humans.

They were now pulling into Piazza Bollente and slowing to a halt. Roman had navigated the narrow medieval street admirably, stopping for a child on a bicycle, avoiding the flower stand which had been left just a little too far into the road, and avoiding scraping against the low balconies where the road narrowed to little more than a footpath. Safe, smooth and millimetrically accurate. World class driving which few humans could be expected to match. But, as Roman sat obediently in the blue square, no one was leaving. The humans just sat or wandered around noisily inside. It would take another 15 minutes to sort everything out and get everyone off to lunch.

Thank You

