TechnoSapiens Symposium Proceedings Document

Produced by the Symposium Proceedings Committee
Semester 2, 2018

HUMN1201
Perspectives in Humanities

SCIE2011
Perspectives in Science

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Contents

Document outline

This document was produced by the 2018 Symposium Proceedings Committee. The Symposium Proceedings document outlines information regarding the work of Perspectives in Science (SCIE2011) and Perspectives in Humanities (HUMN1201) students during Semester 2, 2018.

Included is information about each course, details of the activities the students completed during the semester and an overview of the organisation and execution of the 2018 SCIE2011/HUMN1201 student-led symposium, TechnoSapiens. The chair from each of the symposium's committees have also written letters to describe their individual roles and experiences in producing this symposium.

This document will serve as a record of the semester and an assistant to future students by making them aware of what is involved in completing these complementary courses. Furthermore, it will provide information on how to organise a successful student-led symposium in the years to come. Additionally, the feedback compiled from the TechnoSapiens symposium will allow future students to tailor specific aspects of their symposium to the desires of their future audience.

HUMN1201

Perspectives in Humanities
(Bachelor of Advanced Humanities)

Course coordinator/lecturer
Associate Professor Sally Butler

Class list

Matthew Bapty	Sam Dooley	Tom Lebsanft	Kate Power
Sean Canning	Holly Ellis	Hannah Loneragan	Thomas Rathbone-Boschis
Gordon Chadwick	Tiffany Falconer	Paige Maunder	Hector Richalot
Emil Chandran	Jingyuan Feng	Emma Newman	Karl Rosenberg
Nadia Crawford	Tom Harrison	Trent Nixon	Lecy Strathdee
Sammy Dee	Rose Heimans	Jenny Nguyen	Paul Williamson
Emily Dodd	Leticia Hana Maxey-Fisher	Jack Pashley	Maximus Woodroffe-Hill
Zenobia Dollimore	Luke Kratzmann	Callum Pope	Mercedes Woodrow

SCIE2011

Perspectives in Science
(Advanced Study Program in Science)

Course coordinators/lecturers
Dr. Michael Bulmer
Dr. David Simmons

Class list

Liam Balaam	Robyn Davies	Flynn Linton	Ingrid Miller
Nia Bickham	Andrew Entwistle	Amy Lubrano	Jess Mills
Sienna Blanckensee	Zoe Garson	Joseph Lyons	Emily Reid
Samuel Brown	Lauren Gilmour	Safari Madden-Smith	Hugh Schroder
Daniel Campbell	Matthew Gover	Ryan Mallabar	Anneka Smith
Ben Carew	Tristan Houghton	Tessa Mancienne	Amelia Watson
Alex Carleton	Tina Jin	Shaun McAnally	Montana Wickens
Harry Cosgrove	Matthew Johnson	Emily McGuren	

Introduction

The Course

This semester, the Bachelor of Advanced Humanities (Honours) and a select group of students from the Bachelor of Advanced Science, the Bachelor of Biomedical Science, the Bachelor of Mathematics and the Bachelor of Science had the opportunity to collaboratively investigate and address issues that impact both the sciences and the humanities. This was executed through an interdisciplinary approach. Three seminars were run during the semester, in which guest speakers from both science and humanities backgrounds addressed a variety of topics. The three modules of the semester were Food and Consumption, Cosmology and Sex and Gender.

Using the knowledge gained from these seminars, groups of four set out to design and develop a pitch for an interdisciplinary symposium. We drafted symposium proposals which detailed the themes, guest speakers and logistical plans involved in the creation of a symposium on the chosen topic. We then pitched these proposals to our peers for evaluation and the top five moved on to a panel. This panel contained several respected members of the academic community, who went on to pick the winning proposal: TechnoSapiens.

In addition to the symposium proposal, we had the opportunity to witness other interdisciplinary efforts between the sciences and the humanities when we visited the Art meets Science Exhibition at the Ecosciences Precinct in Dutton Park. There were also opportunities for networking and the development of professional relationships. Finally, our other assessment provided the opportunity for the development of valuable research skills while encouraging the development of new ideas and interdisciplinarity. This has been an excellent experience and has taught us the value of an interdisciplinary approach in academic and public spheres.

Symposium

Collaboration between the science and humanities students produced a symposium on the fascinating topic of TechnoSapiens. This symposium discussed the impact that technology will have now and in the future on the human body and beyond. Our speakers aimed to discuss life and death, and to what extent we should control these functions through technology. Furthermore, the physical and social impact of this technology was explored in detail with the assistance of these 4 special guests, highlighting their unique perspectives.

With the use of medical technology, we have become the only species on Earth to hinder the process of natural selection. Every life-form on Earth has arisen through this process, which involves the capacity of a species to adapt to changes in the environment, which impact their ability to compete, survive and reproduce. Current evidence maintains that the genetic makeup of humanity is in stasis and is not likely to change naturally any time soon. Evolution, given the technological innovations of today, has the potential to be capitalised upon, utilised and hastened. Technological advancements in medicine have facilitated not a natural evolution, but an artificial one. Medicine has prolonged our lifespans, restored eyesight, hearing and speech. Even our reproduction has been revolutionised and controlled through the use of contraception and fertility treatments such as IVF. Increased survivability of individuals means that genes that would dwindle from the genetic code over time through death and selective mating now have the potential to be carried through to the next generation, which has potentially severe repercussions for the survival of the human race.

The steady rise of technologies like genome editing, CRISPR and robotic adaptations are pushing the human race into the TechnoSapien era; a world where we are designed before we are born. Before we know it, the unforeseeable and unpredictable effects of such rapid, artificial evolution will come to light. We will see behavioural changes as our purpose shifts away from reproduction and towards self-enhancement. Our sense of identity will thus be less family-oriented, and death will no longer be so close to us. This development will force us to rethink how we live our lives. This symposium will explore the opportunities the TechnoSapien era will bring, so that these effects can be identified and considered. We must draw attention to the future before it happens so that we may, in some regard, utilise our insight to progress cautiously.

Symposium Chairs and Committees

Symposium Chair
Shaun McAnally

Symposium Treasurer
Matthew Gover

Symposium Program Committee
Chair - Emily McGuren

Liam Balaam	Zoe Garson	Hannah Loneragan	Montanna Wickens
Matthew Bapty	Tristan Houghton	Emma Newman	Paul Williamson
Nia Bickham	Safari Madden-Smith	Jack Pashley	
Alex Carleton	Luke Kratzmann	Thomas Rathbone-Boschis	
Harry Cosgrove	Tom Lebsanft	Amelia Watson	

Symposium Organising Committee
Chair - Sammy Dee

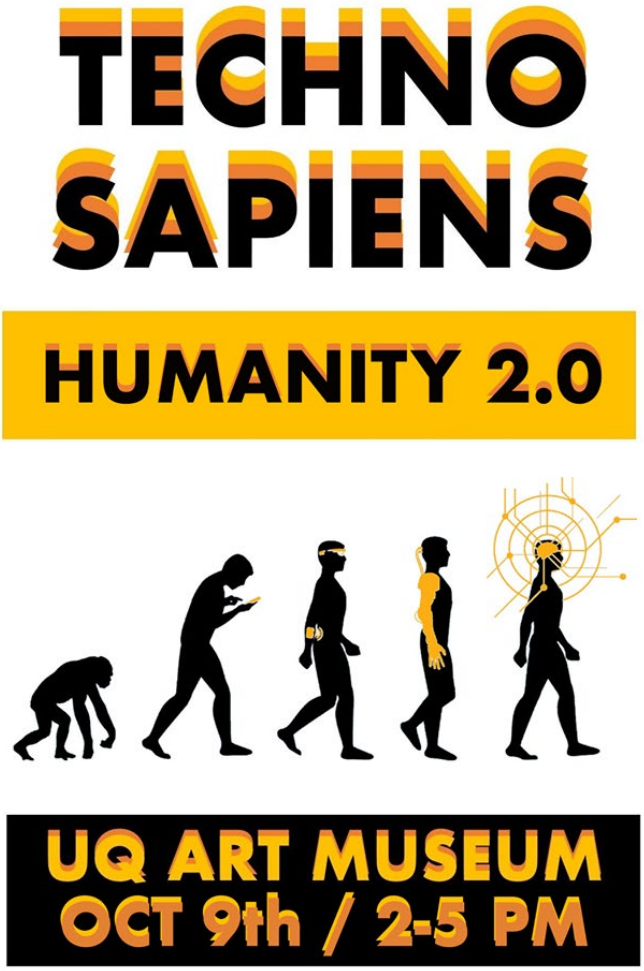
Daniel Campbell	Holly Ellis	Leticia Hana Maxey-Fisher	Callum Pope
Gordon Chadwick	Tiffany Falconer	Ingrid Miller	Hector Richalot
Emily Dodd	Jingyuan Feng	Paige Maunder	Lecy Strathdee
Sam Dooley	Tom Harrison	Tessa Mancienne	Maximus Woodroffe-Hill
Zenobia Dollimore	Rose Heimans	Jenny Nguyen	Mercedes Woodrow

Symposium Proceedings Committee
Chair - Sienna Blanckensee

Samuel Brown	Nadia Crawford	Joseph Lyons	Kate Power
Sean Canning	Flynn Linton	Ryan Mallabar	Karl Rosenberg
Emil Chandran	Matthew Johnson	Trent Nixon	Hugh Schroder

Advertising

The symposium design team was responsible for creating the promotional and visual materials of the TechnoSapiens symposium. The design team began by consulting with the other teams in order to determine the aesthetic of the symposium. Once we had settled on a general style and theme, the design team divided the workload amongst each other. The team utilised various programs, including Adobe Photoshop, Microsoft Word and PowerPoint to create the designs. Our general process consisted of a workshopping phase, where the team would brainstorm ideas for a given task. This is followed by the design phase itself. Finally, there is a review phase, whereby each person's work is reviewed and finalised.



The design team's productions included; social media banners and promotions, posters, flyers, survey cards and the PowerPoint presentation for the symposium. Overall, the work went smoothly and few problems were encountered. However, there were minor difficulties with the printing process for the physical advertising materials, which took longer than anticipated. Fortunately, this did not have a major impact on the symposium.

Symposium Speaker Biographies

Dr Dimitri Perrin dimitri.perrin@qut.edu.au

Dr Dimitri Perrin is a Senior Lecturer of Data Science at QUT, who has devoted his career to exploring the field of Computer Engineering, with a particular focus on modelling and simulation, computational biology and bioinformatics, and data analysis.

Born in France, Perrin received his education in Lyon, and went on to study Computer Science at Blaise Pascal University in Clermont-Ferrand. There, he received his Master's Degree in 2008. Perrin proceeded to study at Dublin City University, writing his 2008 PhD in on the diversity of latency periods for HIV infections. Beyond academics, Perrin enjoys baseball, photography and reading. In conjunction with his fluency in English, he has also learnt Spanish and Japanese.

Dimitri also spent time as a Research Fellow at Osaka University, the National Editor at the quarterly magazine for the European Research Consortium for Informatics and Mathematics, and a Researcher at Dublin and the RIKEN Brain Institute in Japan. Perrin has been as a lecturer and researcher at the Queensland University of Technology since 2015, where he has studied CRISPR, biomedical imaging and digital health research across numerous projects. Moreover, as group leader of the BMDS Medical Lab at QUT, Dr Perrin stands at the forefront of a new Scientific field and has used his expertise to educate people throughout Australia on the importance of these advancements.

Dr Lisa Dethridge lisa.dethridge@rmit.edu.au

With over 20 years of research in her field, Dr Dethridge has become a pioneer in the study of visual arts techniques, and their implications for modern science and artificial realities. She has travelled the world and advised major companies on how they can best demonstrate their ideas.

At Melbourne University, Dethridge received a Bachelor of Fine Arts, having studied a wide range of disciplines, from drama and film to literature. Additionally, she earned a Master's Degree in Political Studies. Travelling to and studying in New York, Dethridge received her PhD in Media Ecology. The topic of her PhD was: 'Sociology, anthropology and history of mass media, from cave art to computer science.' In New York, Lisa challenged herself with several jobs at publishing companies, and studied military industrial communication systems with the United Nations. She even worked at NASA in aerospace research, where she used her media and data analysis skills.

With years of experience in both scientific and political spheres, Dr Dethridge did some of her most notable work in Hollywood, working for major media studios including Fox, Working Title, MTV, CBS, NBC, and CNN. Academically, Dr Dethridge works as a Senior Lecturer of Design and Social Context at the Royal Melbourne Institute of Technology. As a media expert, Dr Dethridge has introduced innovative communication techniques to the media industry, such as utilisation of virtual reality. Some of her most recent research has been on transhumanism. Using advanced education techniques and incorporating mixed medias, she has helped further the research in this new field.

Prof Andrew Crowden a.crowden@uq.edu.au

As a world expert in bioethics and philosophy and having chaired several bioethics groups and councils, Associate Professor Crowden is no stranger to evaluating and explaining the ethical pros and cons of scientific issues.

With a Master's Degree in Bioethics from Monash University, Crowden has had a long lasting interest in the field of philosophy and its application in modern academic fields. After receiving his Doctorate in Philosophy from Monash, Crowden has contributed to many journals, books, conferences and research reports. These different mediums have allowed Crowden to discuss issues such as the support of rural health professionals, ethics in Indigenous health care, research integrity in Australia, and, more broadly, issues in psychiatry, psychotherapy, euthanasia and nursing.

Crowden also offers his expertise at Crowden Consultants, a management consultancy business specialising in practical ethics and evaluating large and small businesses within the medical sector. However, his most prominent research concerns ethical codes in various scientific fields, which he teaches as an Associate Professor at the University of Queensland. As a chief investigator at UQ's Genomics in Society: Policy and Ethics, and multiple other ongoing projects, including genetic determinism and policy challenges associated with the delivery of genomics, Crowden's expertise makes him a valuable speaker and an ideal example of an interdisciplinary thinker.

Professor Michael Milford michael.milford@qut.edu.au

Having an enduring interest in science fiction and technology, Professor Michael Milford decided to obtain his Bachelor of Engineering and PhD at UQ. Milford has studied in London, Edinburgh, Boston and Brisbane, and is currently a dual citizen in Australia and America. Becoming an expert in 'interdisciplinary research at the boundary between robotics, neuroscience and computer vision' has given Milford the opportunity to educate thousands of people as Professor of Electrical Engineering and Computer Science at QUT. His specialisation in robotics and autonomous systems has also enabled him to become an Australian Research Council Future Fellow, Microsoft Research Faculty Fellow and Chief Investigator at the Australian Centre for Robotic Vision.

With research attracting more than twenty-two million dollars in independent and large team grants from the Queensland Government, Microsoft and the United States Air Force, Milford is recognised as a leading scholar in the field of robotics. Among dozens of presentations at symposiums and international conferences, Milford has spoken at Google, Amazon, Microsoft, Toyota, OpenAI, and at the 2018 Technosapien event. Furthermore, Milford also provides educational videos on YouTube, has delivered a TedX talk, and runs his own company; Math Thrills Pty Ltd, 'combining mass market entertainment and STEM education,' which has rolled out 'in more than 200 schools across Australia;' through which he has shared his passion for science to Australian youth.

Some of Professor Milford's most recent research includes modelling sensors and transmissions within rates brains, to use within robotic algorithms and programming. This new, innovative research is intended to develop cost effective advancements in intelligent robotics and technologies, and has earned him numerous fellowships, academic honours and prestigious awards.

Symposium Presentation Summaries

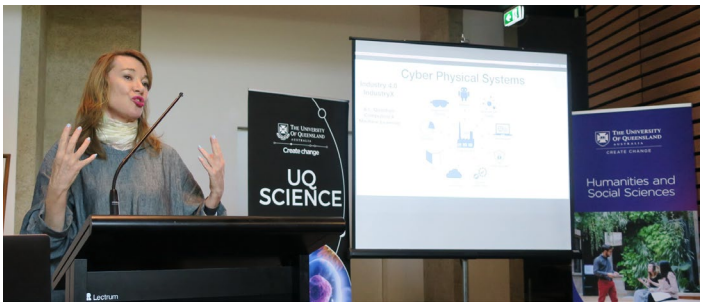
Dr Dimitri Perrin

Dr Dmitri Perrin spoke about gene editing as a way of modifying biological evolution in both humans and other lifeforms. He explained that humans have been modifying genomes throughout history using largely inaccurate means such as selective breeding. However, in the present day, with scientific innovations of late, we have a greater understanding of human and animal genomes which, in turn, has led to the discovery of Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR). CRISPR is, in simple terms, the immunity memory of bacteria pertaining to previous encounters with viral infections. Recent research conducted by Perrin and his colleagues reported that this system can be 'hijacked'. This can be achieved by using the CAS-9 protein and replacing a cell's existing immune memory with a desired sequence. Depending on what happens during this phase, a desired gene can be eliminated, replaced, or modified. According to Perrin, if a species' genome and desired gene for modification is known, there is almost no technical limitation to what can be achieved.

This relatively unlimited ability to modify genomes begs the question of acceptable parameters of use. In an attempt to find the answer to this question, an exercise was conducted in public whereby people on the street were asked what they thought CRISPR technology could be appropriately used for. The exercise yielded a variety of responses, some were practical, some were theoretically interesting, but most were downright bizarre. Nonetheless, every individual appears to have a unique idea about what is an acceptable application of CRISPR technology. These findings led Perrin to examine some of the real-world applications of CRISPR and how close scientists are to actualising these applications, and what the ethical concerns are. Take, for example, malaria. While CRISPR would allow an introduced gene to make the entire female population of mosquitoes sterile, there are ethical concerns involved with this. It would remove an important food source, which would have a dire impact on the food chain within and beyond that ecosystem.

In addition to this, Perrin spoke about the current clinical trials involving the use of CRISPR to alter the genes that cause sickle cell disease. While the elimination of the disease is a positive outcome for humans, there are ethical concerns. Modifying the body cells of a human being will only effect that individual human. However, if the sex cells were modified, the offspring of that individual will inherit the changes to the genome. Thus, it would have a lasting impact generationally, raising ethical issues. Finally, Dr Perrin concluded that while this technology has great promise, and the potential to change the world, it's creation of new problems calls for proper ethical decisions.

Dr Lisa Dethridge



Dr Lisa Dethridge has a background in film production, a passion for technology, and has worked around the world with multiple organisations, including NASA and the UN. A self-proclaimed humanist, when confronted with advancing technology, Dethridge asks, "how does this better our existence?" For context, she drew attention to the ever-changing cyber-physical system known as industry X, encompassing advances in artificial intelligence, supercomputing, machine learning, 3D graphics and gamification. Dethridge discussed ethical concerns pertaining to technological advancement in these areas; specifically those concerning security, diversity, inclusion, accessibility and authentication.

To begin, Dethridge gave a brief history of robotics. She argued that its development was built upon the natural human tendency for narratives of metamorphosis and hybridity. For example, ancient religions often depicted their Gods as animal-human hybrids. This inclination has evolved into a desire to morph human bodies with technology. While it is largely accepted that humanity and technology are separate entities, Dethridge argues that humans are a mirror to robots - we personify robots and mechanical figures. This blurred line between man and machine has peaked individual interest in many.

Since the beginning of the industrial age, there has been concern and conjecture around the replacement of humans by robots in certain occupations. Dr Dethridge spoke about how this will only be an increasing issue in the future, forcing the definitions concerning sentience and non-sentience to be reconsidered, and placing strain on human-robot relations. For example, issue has been taken concerning a robot in Saudi Arabia, 'Sofia,' who was made an official citizen of the country. This raises the question of whether a robot should or should not be made a citizen, a chiefly human position. This in turn draws attention to the possibility of robots being capable of doing anything that a human can do. Both humans and robots act within separate autonomous systems: society, and technological limitations respectively. In the future, these separate systems may become more integrated than expected, further blurring the line between man and machine. Dethridge argues that humanity must be careful not to take things too far, and maintain distinctions, concerning virtual reality and AI, between what is real and what is not.

Changing tone, Dethridge elaborated on the positives of artificial intelligence and how useful they are in numerous industries. The use of robots in aged care facilities have opened people up to new experiences. Interaction with a virtual world through avatar interfaces have allowed people to live in a free world without consequences, which has helped individuals cope with mental illness. Robot Zee has great potential in making life easier for people working in the agricultural industry, with remote sensing helping to predict disasters, and assist farmers. In addition, while ethically concerning, the development of robotics also has a growing market in the defence industry.

Dethridge concluded her segment by warning her audience against becoming too entranced by new technologies, and losing their human condition in the process.

Prof Andrew Crowden

Associate Professor Andrew Crowden spoke about genomic and artificial intelligence, which are central to the development of TechnoSapiens, and proposed possible futures and choices humans will have to face. He began by outlining key questions the prospect of TechnoSapiens raises. We have glasses, bionic ears, hearing aids, and prosthetic limbs, what is next? Other questions included:

- How far is too Far?
- Will humans merge with machines?
- Can AI have consciousness?

Most of his presentation focused on genomics and AI. Genomics is concerned with an organism's DNA, focusing on, for example, genes and their relationships with one another, different from genetics which focuses on a single gene. Professor Crowden also explained epigenetics as concerned with the impact of environmental factors on gene expression. He said we are in an age of genomics. With the prospect of gene editing technology being widely available and applicable, there is lots of money and investment in the area, and governments are keen to be involved. He noted the while technology has the potential to combat rare disease, many genetic diseases are not caused by one gene and are often polygenic or multifactorial, impacted by environmental and lifestyle factors. He also said that precision medicine, which brought together genetics, genomics, lifestyle factors and data science using artificial intelligence, is on the horizon. Precision medicine could, in the future, revolutionise predisposition testing and diagnosis.

When it came to research, Professor Crowden believes Australia is a world leader in the field, and compliments their legislated frameworks and documents to guide research and decision making. Drawing upon his experiences as the chair of multiple human research ethics committees, Crowden made a point of explaining the importance of governance in this kind of research and innovation. Without it, things would get scary.

At this point Professor Crowden drew upon Mase Tegmark's 'Life 3.0' which classifies three forms of life: biological, cultural and technological. As a philosopher, Professor Crowden framed TechnoSapien life in treatment and enhancement. The consensus, he suggests, implies that people are not too worried about the use of this technology in medical treatments. Instead, they are apprehensive about these enhancements being used to create 'designer babies'.

Professor Crowden emphasised the potential benefits these technologies have to offer, such as stopping the genetic lottery, while also outlining reasons to be cautious and the type of issues that could arise. For example, access to this technology may be limited and potentially cause instability within modern society. He ended his presentation by driving home the message that the technologies that will make a TechnoSapien future possible are coming, but with them comes difficult decisions that must be made. "We cannot leave them to sort themselves out, we are each our own philosopher" he said, and he hoped he had given us all some food for thought.

Prof Michael Milford

As a professor of robotics at QUT, Michael Milford was able to provide a more quantitative perspective on what the TechnoSapien era might look like, and how close we are to reaching it. Professor Milford realistically defines the "TechnoSapien" as an integration of machinery into everyday human life. He focused on three areas of emerging technology in particular; robotics, self-driving cars and artificial intelligence. He stated these technological advancements are central in reaching a TechnoSapien world.

He began by briefly talking about robotics and what role it might play in bringing us into a new era. Milford explained that at the moment, robotics is mostly used for menial tasks and that while there are people attempting to further this technology into a more versatile form, such as autonomous robots, advancements in hardware are slow. He implies that perhaps this advanced age will not involve fantastic robot servants and androids, but something else entirely.

From this, Milford moved on to the best example we have currently for the integration of advanced technology into everyday lives: self-driving cars. He explained that by removing human error from the driving experience, the road toll would be significantly decreased. There still exists problems with adapting technology to allow for and cope with human unpredictability, but it is certainly a stunning example of how new technology might become an integral part of human lives. It is a booming industry and everyone from independent tech to big car companies are getting in on it, so we can expect this to be one of our first steps to improving future human experience with advanced technology.

Finally, Milford delved into the topic of artificial intelligence, stressing that this is where the biggest transformation was occurring. He explained this industry is experiencing a boom for two main reasons. The first is that the great minds in tech are no longer just working for mining, defence and agriculture companies, and are beginning to move more towards universities and independent funders. These people are less focused on money, and are geared towards change and innovation. Secondly, we are currently experiencing an "AI Summer" where there is a massive influx of data from the internet to feed to the AI in order to train them, something which was much more difficult before. He then went on to show how this technology will be vital in bringing us into the TechnoSapien era. Already, there are systems that are being modelled on the human brain (neural networks) and these systems can perform tasks much better than humans can. They can improve efficiency in power management, reduce human error in medical application and just complete tasks more efficiently than humans in general.

He finished up his talk with a message for the future. It's important to look through the hype, not everything is as perfect as it seems, but we should also avoid thinking in absolutes. Never say "technology could never do that better than a human being" because that just might happen in the future. Finally, Milford told us to stay updated and informed because we wouldn't want to miss the ushering in of the TechnoSapien era.

Themes From The Panel Discussion

The panel discussed topics from the issues plaguing the advancement of AI technology to the sweeping changes currently taking place that may in the future lead to the TechnoSapien age. A range of nuanced and thought-provoking perspectives were provided by the panellists, generating lively discussion. Although the panellists touched on many points, the three main themes that arose were that of privacy and consent, socio-economic division, and the future of society.

There were some disagreements amongst the panellists regarding the relevance of privacy and consent in modern society. Dr Lisa Dethridge argued that ideas of privacy and consent are outdated, and that data should be allowed to flow freely, uncontrolled by interest parties. Professor Michael Milford countered her argument by stating that bureaucracy and regulation prevent catastrophic data-related issues that may arise due to our own ignorance or the sheer complexity of data structures. In some respect, each panellist agreed to the idea of reconceptualising consent in the coming age. For example, there is a concept known as dynamic consent, which refers to unspecified terms of agreement, such as those found on websites and apps that ask for access to your data.

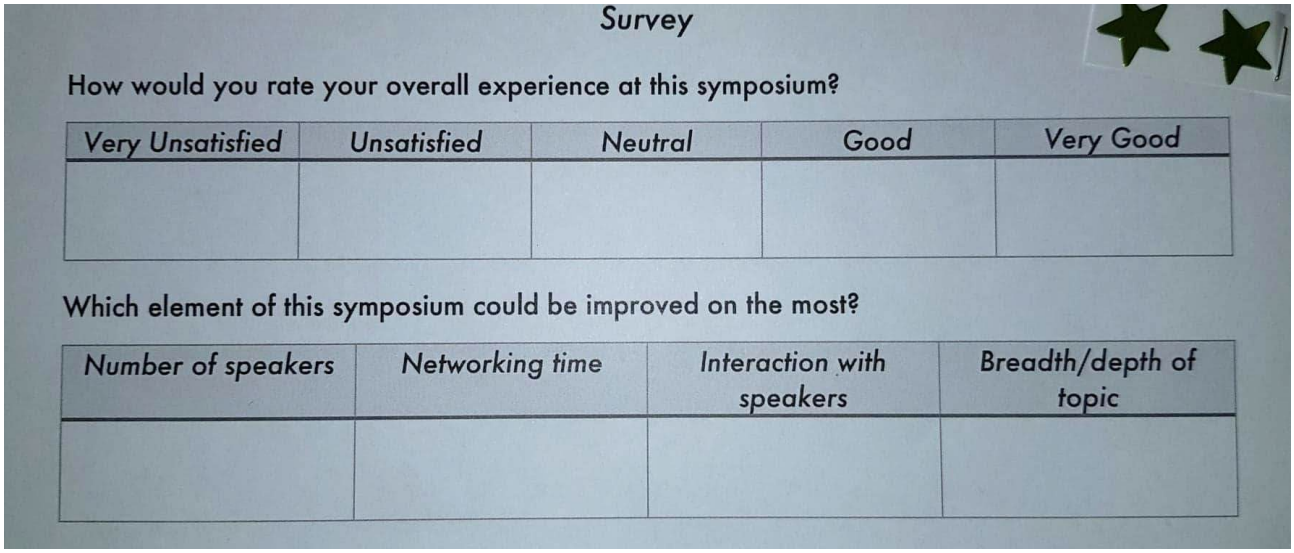
The further socioeconomic division of society due to new technology was discussed at length. Professor Milford stated that the potential worsening of this divide was not necessarily a bad thing. If the divide does indeed worsen, he argues that so long as the bottom 20% are still better off than they would be decades ago, it would be acceptable. Ultimately, however, it is up to us, as a society, to determine the morality of this situation. Professor Andrew Crowden asserted that some new technology must have the overt purpose of combating issues around food, poverty and war.

All the panellists agreed that, at-least in the short to medium term, AI will free up time for greater amounts of people to pursue creative activities, facilitated by the increasing replacement of white collar jobs. Therapy and teaching, among other interpersonal jobs, would likely be replaced last, if at all. Regardless of profession, it was recognised that IT savviness would become part of everyone's skillset. Additionally, the panel was unanimous in believing that robots deserve rights. Dr Dethridge maintained that in order for technological development and AI to remain in a symbiotic relationship with humans, we must project our highest selves onto them, so that compassion and empathy is built into their code.

The rapid development of AI and other technology only serve to drive conversation regarding the future of humanity. Whether the path we follow goes down that of a sci-fi dystopia, one filled with destruction and division; or utopia, where unity holds strong and everyone is entitled to their hopes and dreams, hinges on these very conversations regarding consent, privacy, socioeconomics and our vision for the future.

Audience Feedback

Students and guests who attended the symposium were asked to complete a two-question survey sheet to rate their overall experience of the symposium. A likert scale was used, and guests were asked about which aspect of the symposium could be improved upon the most.



Survey

How would you rate your overall experience at this symposium?

Very Unsatisfied	Unsatisfied	Neutral	Good	Very Good

Which element of this symposium could be improved on the most?

Number of speakers	Networking time	Interaction with speakers	Breadth/depth of topic

Below are the results compiled from 48 review cards received after the symposium had concluded.

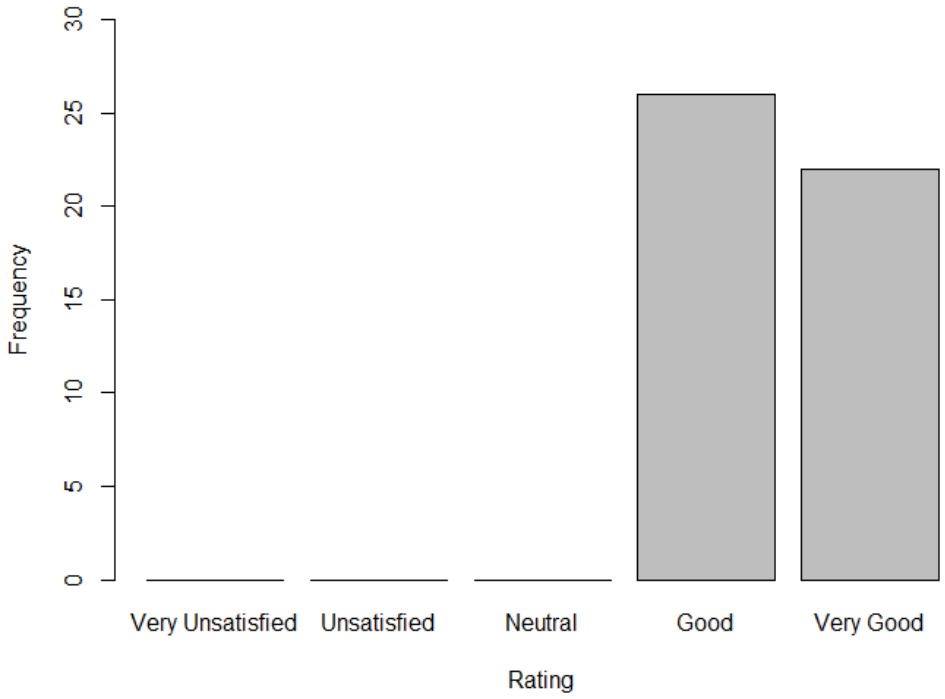


Fig. 1 Audience feedback for *"How would you rate your overall experience at this symposium?"*

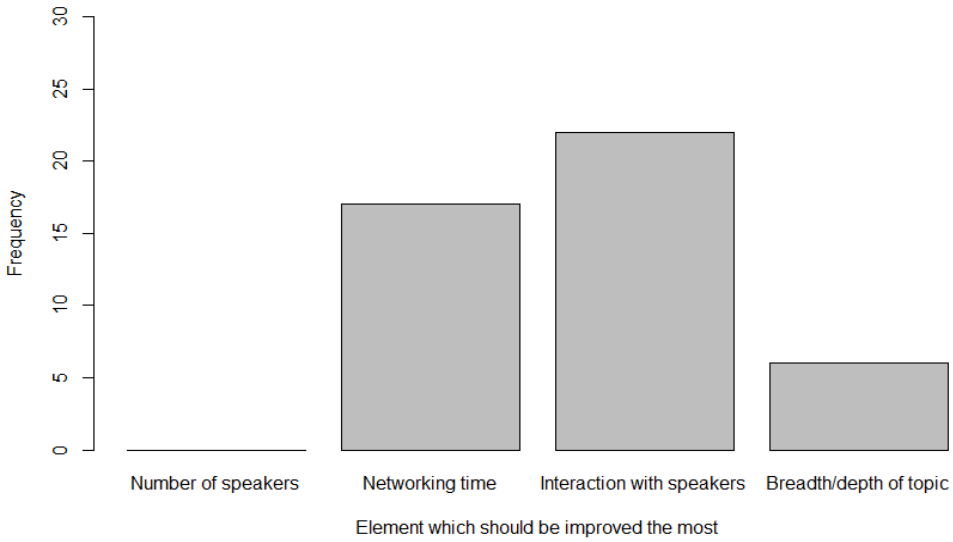


Fig. 2 Audience feedback for *"Which aspect of this symposium could be improved upon the most?"*

The audience feedback (refer to Fig. 1) indicates that the symposium was a success and the guests thoroughly enjoyed their time there. When assigning numeric quantities to each of the rankings (1-Very Unsatisfied, 5-Very Good), the average overall experience was 4.46/5, assuming there is equal weighting between each possible response.

With regards to the Fig. 2, the most requested improvement was interaction with speakers (22 responses) with networking time close behind (17 responses). The audience was satisfied with the number of speakers present, which indicates that in future symposiums, 3-4 speakers is satisfactory. The main request for improvement was the duration of the panel discussion, where the audience has the opportunity to ask the speakers questions. A longer panel discussion will allow for discussions with greater depth and more diversity in the type of questions being addressed by the speakers. The networking time during the symposium's afternoon tea break could also be extended in the future from 20 minutes to 30 or 45 minutes to allow speakers, students and other faculty members to informally discuss their current work, opinions or other relevant topics.

Letter from Symposium Chair

Having been elected as Symposium Chair, I have had the unique privilege to oversee the hard work students from SCIE2011 and HUMN1201 have put into our joint symposium for 2018: TechnoSapiens. Working directly with committee leaders and the broader Science and Humanities cohort to bring this year's symposium to fruition has been a demanding yet rewarding experience. The leadership team have done an incredible job organising their respective committees and have completed the tasks necessary to produce an exciting and engaging symposium. As a result of their swift and efficient work, we were very fortunate to have four captivating speakers, who contributed unique perspectives from their individual philosophical or scientific backgrounds.

Symposium Chair is a role which requires both the ability to develop a clear and uncompromising vision of what the symposium could be, whilst simultaneously attending to small details which provide the finishing touches and polish to the event. Working closely with the leadership team from the start ensures that a clear and consistent path to the final event is pursued within the allocated time frame. Making quick and effective decisions in response to questions posed by the leadership team, and coordinating the efforts of each team, was my primary role in the weeks leading up to the symposium. It was essential to keep a close watch on all critical tasks, whilst also leaving time to iron out any last-minute issues that inevitably arise before any large event. Despite the demanding workload of this position, taking time to step back and see everyone's amazing work is one of the most satisfying facets of this role and one which has made me extremely appreciative of each committee member's efforts.

I am also very grateful to the Symposium Task Team for being there on the event day to oversee final setup at the venue, the Symposium Speaker Team for introducing each of our wonderful speakers and the Symposium Design Team for preparing each of our printed materials in a consistent graphic theme with a fast turnaround. These small teams of dedicated peers worked above and beyond to deliver everything they set out to do leading up to our symposium.

Perspectives in Science and Perspectives in Humanities has, at their core, a strong emphasis on the importance of teamwork to achieve something that would be impossible for an individual to accomplish alone. Our TechnoSapiens Symposium is an exemplar of how teamwork, coordination and a driven mindset can produce amazing results. Reflecting on the efforts of our HUMN1201 and SCIE2011 classes, I am proud to say that we have achieved everything we set out to do and have produced a symposium which was only possible with the complete dedication of a team of brilliant fellow students.

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Letter from Symposium Treasurer

My name is Matthew Gover and I was the treasurer for the SCIE2011/HUMN1201 symposium in 2018. I personally loved being treasurer as it taught me a heap about a side to events that I hadn't really considered and for that, I am very grateful. Being treasurer I learnt how to structure a formal email to request sponsorship, I learnt how to create and control a budget and I was able to be a part of the UQ financial process which is a very formal one that I had previously overlooked. With the role of treasurer, came a lot of self-discovery, as I had to learn the ropes of what a treasurer was meant to do before I started organizing the finances that made this such a successful event. The way I see it my job essentially had two main capacities; the treasurer and the fundraiser. First I will outline what I did for the treasurer roll and then I will go through the funding side of this job.

Under the treasury side of things my main roles were budgeting, buying and quoting. The first thing I had to create was budget for approval. Once this budget got sent back to me and I edited it a couple times it got approved, which let me know how much money could be spent on certain components of the symposium. I recommend getting quotes before sending off the 'pre-approval' budget as it makes the it much more accurate and representative of how much the event will cost. After the budget was approved I was responsible for liaising with campus travel to get, confirm, book and pay for the flights and accommodation for Lisa Dethridge from RMIT. This process involved a lot of contact with both the finance department and campus travel to make sure an appropriate flight was booked for Lisa. Furthermore, I worked with the organising committee to authorize payment for the event's catering. One of the biggest challenges in this role was trying to stick to the costs that were on the pre-approval budget as some aspects of the budget ended up costing extra, which meant I had to work out where we could save money.

The other side to my role was funding. As the symposium is fully student run it was my responsibility to email different schools, faculties and institutes of the University of Queensland to request sponsorship for the symposium. After countless emails and meetings with schools and faculties I managed to secure sponsorship from the school of Historical and Philosophical Inquiry, the Humanities and Social Sciences student futures team, and the Faculty of Science. I would like to thank the sponsors as the event would not have been as successful without their contributions.

I learnt a great deal about finances and treasury throughout this role and I was so proud when the symposium went well. It was such a nice feeling to see everyone's hard work pay off and result in a smooth event that created positive discourse between such diverse disciplines.

Matthew Gover (Bachelor of Science/Education (secondary))
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Letter from Symposium Program Chair

Congratulations, your peers have trusted you with this amazing role and you are about to work hard and learn so much. Right off the bat, Program Committee needs to hustle. Finding speakers is initially your number one priority and the sooner these are locked in, the better. The program committee in 2018 included 16 people and myself, so I easily split them into 4 groups. These were: Speaker selection, Speaker Invitation, Format and VIP Invitations.

The Sub-Teams:
Speaker Selections: The symposium proposal will usually have 3-5 ideal speakers. You will need to identify many more than that. To put that into perspective, this year we were lucky and only had to contact around 17 speakers, the year before us had to contact 39. That's why we found it useful to have a few people working on finding back up speakers.
Speaker Invitations: This is the team I worked most closely with. You will need a team of responsive and confident people. This role included emailing and calling academics to invite them to speak. The time of the symposium, around September/October, is peak conference season for academics, so many check their emails infrequently. We found it most effective to send an email and call them on the same day to ensure that they had seen the email. If you don't get a response within 2 business days, move on to the next speaker. For interstate speakers, contact them first so the finance team has time to organise accommodation and flights.
Format: This team were really self-sufficient. They were in charge of the run sheet for the symposium and decided how many speakers we were going to need, working from the proposal. Most of this work comes down to venue and time constraints and speaker availability. Later, they also wrote the speaker introductions and starting panel questions for our MC. We ended up with 4 speakers, each speaking for 30 minutes, an afternoon tea break to split them up for 20 minutes, and a 40-minute panel session at the end. The symposium ran for exactly 3 and a half hours.
VIP Invitations: This team identified around 15-20 local people of interest to send formal invitations to attend the symposium. This included any sponsors, faculty heads and deans, the course coordinators, local members of parliament and relevant clubs and societies. We didn't expect much turn out, however the principle is important for an official event.

You'll find once one job is completed, more jobs pop up. However, the closer to the symposium you get, the less work you should have. Regardless of the participation from your committee, I cannot stress enough how much your Symposium Leadership Team will help you. I recommend having regular meetings and quickly delegating jobs between teams, especially where there is crossover between the program and organising committee. At the end of all the stress and hard work, you will surprise yourself with what a group of science and humanities first year students are capable of! If you have any questions or need any advice, don't hesitate at all to contact me!

Emily McGuren (Bachelor of Advanced Science)
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Letter from Symposium Organising Chair

To the organising committee, thank you so much for your hard work. We faced challenges, and above all, enormous successes organising this year's symposium. The contribution made on all fronts, including the program and proceedings committee, treasurer, and chairperson, was immense and the result equally so. I would like to speak on behalf of the organising committee in relaying our experiences with catering, venue organisation, design, banner set up, speaker gifts, tickets, social media and poster advertising. Within the space of a few weeks, we managed to compete these jobs efficiently, the success of which counted on splitting up the committee and delegating jobs.

The venue was pre-organised, however, I met with an event officer from the Art Museum to get a lay of the land, an event hire package, confirm the time and date, choose an exact space, confirm whether catering was allowed, and inform them of our AV requirements. I recommend the future organising chair to find out the precise costs AV use incurs, as well as the cost of venue hire. The Art Museum was quite spacious, had large capacity, and accommodated all catering requirements.

Some advice, also given to me by the previous chair, is to start early. To achieve this, delegating tasks and acting with those teams worked effectively via Facebook messenger. I organised catering via email. I recommend asking several catering companies for quotes before locking one in. Ensure that you organise the exact times for arrival, setting up and packing down, as that worked best for us. Overall, catering came with large costs and not the most satisfying food, but were punctual.

The design/advertising team were beyond prepared, creative and efficient. Thank you Gordon and Tom for all of your efforts. We started by brainstorming image and colour concepts/aesthetic, and from there they created eye-catching material for social media banners and physical copies of posters. I wrote the text for event brochures, which included speaker profiles and a synopsis of the event. This team organised social media banners, posters, a PowerPoint presentation and survey cards. We contacted a large number of clubs, societies, staff, students and panellists to attend the symposium. Try to approach these people as early as you can in the organising process.

We sourced the HASS faculty and science faculty banners and displayed those beside the projector, which looked great. We gave terrariums, pens from both faculties, and coasters to the speakers as gifts. By the date of the symposium, on EventBrite 91 tickets were purchased. The turn-out was more so 60-70 people, but we are still very proud of this level of interest.

I would like to end by mentioning how much of a rewarding position this was and by acknowledging how much knowledge and experience I gained by working with such a great group of Humanities and Science students. Thank you everyone!

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Letter from Symposium Proceedings Chair

Chair of the proceedings committee has been a rewarding role I am very grateful to have had. This year our symposium, TechnoSapiens, ran incredibly smoothly and had a great turn out due to the collective work of the committees and chairpersons. The role of the proceedings committee was to create this document (which can be attached to resumes in the future), document the event and distribute videos of the event to speakers.

Leading up to the event, we had a photography plan in place. On the day we had a team taking photos, recording the speeches and interviewing chairs/audience members. This video footage and photos were then collated and shared on dropbox so the speakers had access to them, which they greatly appreciated. The rest of the video/interview footage was used to create a 2-3 minute video of the event for keepsake. If you wish to do this next year as well, look into seeing how you would get permission to film people's faces, if you wish to share anything on YouTube as we did not have enough time to sort this out properly.

Before the event this committee also organised the feedback sheets. This included coming up with what we would want from the feedback and how we would get it. We considered using an online survey, but decided that this wouldn't return a large enough sample of responses. So we created survey sheets which can be seen in the feedback section of this document. Hence, the audience members could put a sticker in the box they felt was most appropriate, giving us immediate feedback.

It is also important to have this document planned before the symposium. Plan what you need from the symposium (e.g. need take notes from someone's speech, etc) and delegate the roles to people in the committee. Also have set deadlines, but be aware that these will most likely not be met. So create a little leeway with these as well.

This is only the second year this document has been made, so there still may be sections that could be invented, or that you think shouldn't be in here. This year we added the advertising and feedback section, as well as the 2-3 minute video which were not done the year before. I believe these sections are vital in helping next years' students run their symposium, and to learn from our mistakes.

Overall this task is very rewarding, especially seeing the document come together towards the end. Ensure you stay in touch with your committee over Facebook or a similar platform, to ensure everything is going as planned and everyone understands their role. Also keep in touch with the other chairs even before proceedings work begins, as knowing what's going on helps plan out this document. Good luck to next year's students and thank you to everyone from this year!

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Summary

A great deal of planning went into transforming the symposium from a single proposal to an entire event. The cohort of SCIE2011 and HUMN1201 put in great effort in organising the event, with special praise for the executive team who worked tirelessly to bring the symposium into fruition. The venue, fundraising, catering and advertising for the event had to be organised, with the greatest challenge being finding and inviting guest speakers to present. Through hard work and determination, the symposium finally came together and it was a success.

The symposium started off with Dr Dimitri Perrin discussing the use of CRISPR to modify the genomes of organisms, including humans. The potential of this is limitless. He wonders and implores the audience to consider what the appropriate, ethical uses for this technology are. Dr Perrin was followed by Dr Lisa Dethridge, a humanist who asks, when confronted with advancing technology, "how does this better our existence?" She discusses both the pros and cons of using artificial intelligence in industries, and the negative implications of the merging of humans with autonomous systems in a social context. After Dr Dethridge's presentation, there was a short break with food and drinks provided.

After the break, Associate Professor Andrew Crowden discussed the reasons why we should embrace the potential treatments and enhancements that advanced technology might bring. However, he warns us to be cautious in allocating these technologies, since they have the potential to destabilise society. He believes that the TechnoSapien future will arrive, but with it, comes many ethical choices which must be made. The final guest speaker was Professor Michael Milford who described how the world is currently trending towards a future with advanced technology. These technologies include the development of self-driving cars and AI. He concluded his presentation by urging the audience to stay updated and informed so that we do not miss the ushering in of the TechnoSapien Era.

The panel discussion saw each presenter responding to a series of questions organised by the executive team and organising committee. This promoted an intriguing discussion with perspectives from multiple disciplines of study. Disagreements between the presenters arose and controversial opinions were made which resulted in an entertaining and thought-provoking discussion. The floor was then opened up to the audience to ask questions.

Overall, the symposium was an outstanding success as not only did the event run smoothly, but the attendance and level of discussion was described by the course coordinators of SCIE2011 and HUMN1201 as "the best yet." It has been such a rewarding experience. We gained valuable experiences in leadership, coordination and teamwork through this process. In the end, the symposium gave us the opportunity to interact with academics from a range of disciplines, engaging in a relevant and impactful topic.