



## Digital Natives and the 'always on generation'

How has technology impacted Australia?

*A response to the Australian Human Rights Commission technology issues paper*

Dorotea Baljevic And Ksenija Nikandrova

Master of Data Science and Innovation - University of Technology, Sydney

*The Australian Human Rights Commission released a Human Rights and Technology Issues Paper in July 2018. This paper, and overarching project, seeks to engage the Australian community to inform how technology should “exist to serve humanity”<sup>1</sup>. The issues paper has been released to the public and is seeking answers to ten of their questions ([tech.humanrights.gov.au](http://tech.humanrights.gov.au)) by early October 2018. Consultation and a final report will be produced in 2020.*

*UTS, as education partner to AHRC, had an opportunity to conduct a roundtable with the AHRC on Tuesday 9<sup>th</sup> of October. Receiving feedback post this event, UTS would submit their final collated response on the 23<sup>rd</sup> of October 2018. This report will form part of the submission.*

---

## THE RESEARCH

Being in the 21st century, our society is categorised by the rapid shift from traditional industry to an economy based on information technology. However, we are now inundated with digital products which influence and fit seamlessly into our everyday lives. Through countless developments across all industries, it is evident that the role of technology has the capacity to positively transform our lives. An enormous part of “who we are” is shaped by our experiences - experiences that today are defined and often facilitated by a technological influence. Generation Y is also referred to as the first digital natives – who were raised in a technology immersed world.

As the complexity of technology increases, entropically, as does the situations which arise from its use. When considering the development of technology in the context of human rights, we must also account the potential outcomes of this technology for society. Not only privacy but accessibility, regulation and the potential consequences of artificial intelligence development.

This partnership with Centre for Social Justice and Inclusion, in response to the Australian Human Rights Commission, will allow for re-imagination and re-assessment of where human rights and freedoms intersect with the development of new technologies. When reviewing the 61-page Issues Paper something dawned on the both of us – these issues at a conceptual level, are not dissimilar in nature to key changes in society in the past.

As such our project will focus on three dimensions:



This report will outline what our findings on the ‘present’ state in a Sydney context have discovered and how the AHRC can use this to further understand Australia’s perception of technology before developing a human rights framework. We have used Grounded Theory for our research (Appendix B).

---

<sup>1</sup> Edward Santow, Human Rights Commissioner, Foreward from the Australian Human Rights and Technology Issues Paper 2018

## OUR METHODOLOGY

### Literature Review

A literature review which related the concepts identified in the Issues Paper to available research was conducted (Appendix A). Our approach was to look at the past, present and future. The past to inform when in history has been of similar nature in changes and emotional sentiment of society; the present to inform any additional research related to the AHRC Issues Paper and the future projections by leading researchers. As such four research areas of focus informed our approach to the focus groups:

- a) Millennials and impact of technology to their health
- b) Australia's usage of technology
- c) Impact of social media on society
- d) Scientific revolutions and inflection points in history which raise same sentiment to society as technology

### Interviews

Participant selection was made to ensure there was variety in industry/faculty background, age and location of interviews. 50% of interviews were pre-planned while others were spontaneous in nature occurring in and around Sydney. All participants were notified of research being conducted for a Thesis, however with no context to ensure minimal bias in their responses.

Multiple small focus groups were used as interviews, with the duration ranging from 15 to 30 minutes. Participants included students, professionals, researchers and academics across different industries (Figure 1).

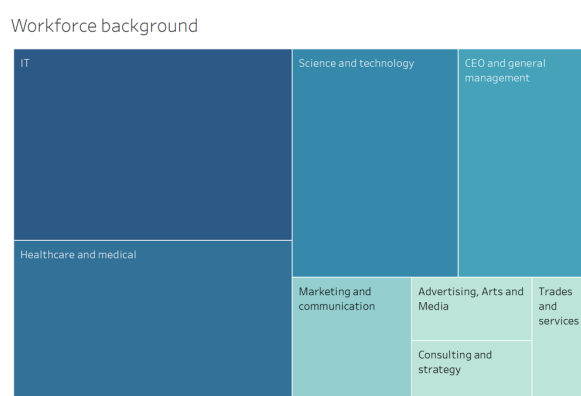


Figure 1 Workforce Background of Interview Participants

Participants ages ranged between 18 to 50 years, with more males available (Figure 2). It is important to note that during one interview primary school students showed interest and were questioned on their thoughts on technology. As these were minors without parent consent, these findings were not included as part of the core data for analysis.

Female versus Male

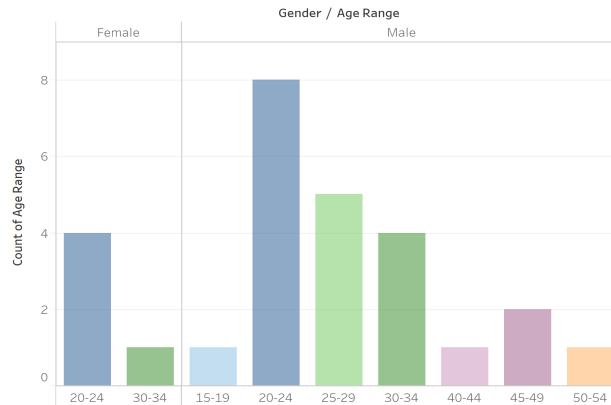


Figure 2 Breakdown of Female versus Male Interview Participants

The focus groups were asked the following open-ended questions:

- 1 What are your thoughts on technology – personally or your reflection on society?
- 2 If you lost your phone today (with no option of getting it or access to your data back) how would you feel?
- 3 What are your thoughts, if any, on AI?

Figure 3 Survey Questions

The questions aimed to gauge participants perception of technology personally and/or reflection on its impact to society around them, how reliant people were on it for their daily usage and their opinions of AI. This research approach required us to meet with people, to hear real stories and empathise with them to understand the current landscape of technological impact in the Sydney microcosm (to hear the responses which summarise the overall sentiment received, please visit this link: <https://youtu.be/OvC1QZgqzs0> ).

In considering the content we were capturing from the interviews, audio capture (and some instances video recordings) we needed to ensure all participants felt safe to share and confident the data was anonymised and protected. Prior to every interview consent was provided and no personal data disclosed, unless permission was provided for. This included indicating to the participants their data rights. As such we specifically ensured we complied with the following acts in terms of handling of sensitive data:

- Australian Human Rights Commission Act 1986 (Commonwealth)
- Freedom of Information Act 1982 (Commonwealth) and FOI and Right to Information (RTI) equivalent

We do also propose, and are open, to guidelines supportive of data sharing for research purposes<sup>2</sup> if agreed upon by UTS and AHRC.

<sup>2</sup>

A) National Statement on Ethical Conduct in Human Research, which covers research on human subjects, recognises the value of making data available for future research.  
 B) Australian Code for the Responsible Conduct of Research state that research data should be made available for use by other researchers unless this is prevented by ethical, privacy or confidentiality matters (Section 2.5.2)  
 C) The Australian Research Council (ARC) Funding Rules for 2016 strongly encourage data deposition in a publicly accessible institutional or subject repository.

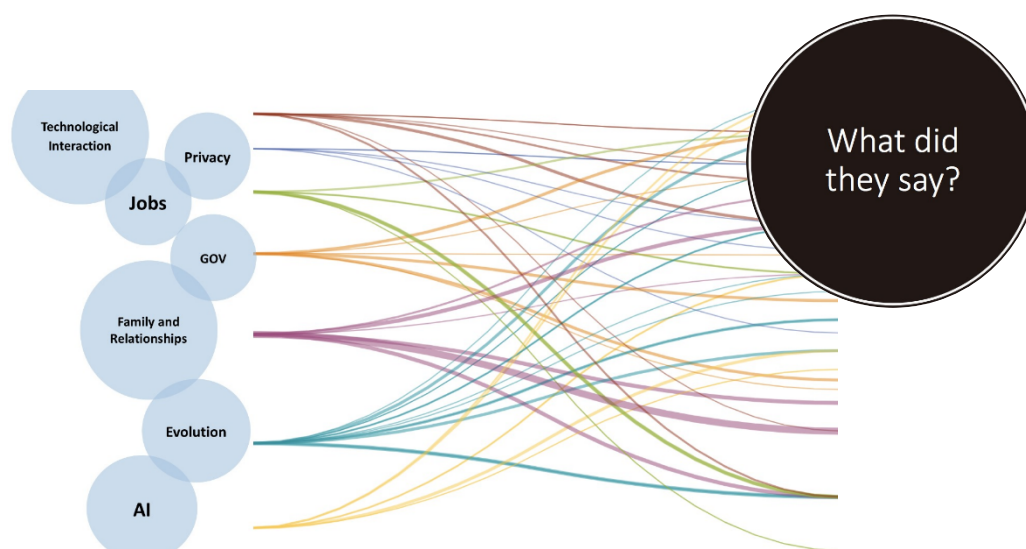


Figure 4 High-Level Themes network diagram

From the analysis eight high-level themes were identified:

1. Technological Interaction
2. Privacy
3. Jobs
4. Government involvement/intervention
5. Family and Relationships
6. Evolution
7. AI
8. Information accessibility (folded into the *Technological Interaction* theme in the diagram above)

These had high cross-correlation with low-level themes which delved deeper into each of the areas, forming a large interconnected network.

Of these, over 80% of our responses were negative in nature. The fear, more generally, was held for the unknown. For example, a slow but definite rise in unemployment will have a tipping point on the economy and society at large. Separately, there was a common belief of participants that Machine Intelligence and AI is reproducible and highly adaptable. This was noted particularly in capitalist economies, which would reward and encourage such use for the benefit of a growing society and efficiencies in payment/utility systems.

General Intelligence, through AI, is something not attainable in the foreseeable future by the authors of this report. However, mundane and repeatable human tasks are at present imminently replaceable.

The positive responses received, while limited, centred around family and relationship. This is where technology aided bridging the gap of physical distance to enable a greater personal connection. Another positive factor was having access to the worlds pool of knowledge in our pockets (mobile devices), and having the ability to reach out to anybody and break through barriers of a divided society.



Figure 5 Low-Level Themes in a word cloud

A change in behaviours was the strongest low-level theme present across all high-level themes. This was followed by psychological and then societal impacts. These factors which are the most difficult to predict and assess (Vincent 2018) are the ones which interview participants raised as being the most important, this exhibits an issue to determine the future landscape for the AHRC.

Outside of this insight from the AHRC roundtable, our review of responses saw us reach theoretical saturation. No additional material became a new finding for our research, rather corroborated what we already had.

Details of the interpretation of the data analysis can be found in Appendix C.

## Theory

Other social factors which were identified that while not articulated became our *aggregate dimensions* (Gioia 2012) that we propose should be a focus of AHRC to understand:

- a) Scale of pronounced fear that was present in every response

All participants showed concern for technological advancement. The fear of the unknown was a consistent theme; in short more negative comments were made than positive.

- b) The disconnect between the concerns raised and willingness for action. Very few individuals were willing to reduce their digital footprint even if they understood the benefits.

As an example, a number of participants recognised their bad habit of constantly being connected (in one interview a participant checked their mobile phone seven times) and importance of having a break from technology. However, when questioned on disconnecting very few were willing to reduce their digital footprint due to FOMO<sup>3</sup>.

As our interviewees resided in the metropolitan areas of Sydney our recommendation is for the AHRC to commission an in-person survey across all populated regions of Australia. It is recommended that the use of the questions we had with the addition of several others will delve deeper in understanding themes of fear and societal disconnect.

---

<sup>3</sup> FOMO – Fear of Missing Out

## RECOMMENDATIONS AND STRATEGIES FOR AHRC

Roll-out of an in-person survey across the nation, even one with less than six questions, should be considered complex. This was certainly true of our findings, which is why based on our learnings we recommend the following counsel be incorporated to ensure quality of the data and analysis:

- **Nomination of interviewers who will not introduce bias**

Glaser (1998) stated “that bias is just one more variable and it is automatically controlled for amongst honest researchers.” As such those conducting the interviews, and ‘researchers’, must be continuously aware that their pre-conceptions can distort the interpretation of data in coding and theory formation.

We recommend training and awareness of all those involved in the data capture/formation using the Grounded Theory approach (Appendix B).

- **Pairing interviewers**

While interviewers being aware of bias (including their own) is important, another method of negating it is to ensure there is two interviewers present for each group. This allows questions to be cross evaluated and no absolute interpretation to be made from the initial responses being provided.

- **Identification of interview participants**

The interviewer-interviewee partnership must reflect an engaged process between both parties. Participants should be viewed as co-authors in the knowledge obtained and not merely repositories of data (Walters 1995).

Our work has been focused on the Sydney metropolitan area – this is by no means a reflection of Australia, let alone New South Wales. As such there has to be concerted effort to identify groups/individuals based on demographic groups that cover all ABS standard classifications.

- **Having high quality recordings**

It is not possible to transcribe while conducting interviews, having a play-back device is vital to have the audio sentiment and entirety of responses captured.

The quality of the recording will impact the capability to use tools to perform the transcription (i.e. Dragon NaturallySpeaking) or in a manual approach, the speed and efficacy of transcription.

- **Transcribing the interview material immediately**

One major concern of this research method is accuracy of data output. This methodology is reliant upon vocal discussion which could lead to misinterpretation during the transformation or transcription of a complex social situation into a text-based dataset (Barbour, 2007). Keeping transcription early in the process is almost as vital as having a good quality recording. The interviewer’s memory in context of why certain responses were being made will fade as time progresses.

As it is likely different interviewers will not be available for every region in Australia and will be reused, the immediacy of transcribing will ensure quality and accuracy of the responses. Particularly in instances of rectification such as when the tool could not transcribe the audio recording. It will also allow for constant comparison between emergent theory (codes and constructs) and new data. (Gasson 2004)

- **Using a third party to code the interviews**

To further mitigate bias, each interviewer who codes the transcriptions will perform this in isolation before sharing their categorisation. Using the Gioia approach, this method ensures themes/codes have not been cherry-picked. (Gioia et.al 2012)

Given the importance of this work to Australia's interpretation to a Human Right's Act the care for minimising bias needs to be treated with upmost care. As such a third party who has not been present in the interviews is being recommended to be introduced (this goes beyond the approach of current theoretical frameworks). They will code the responses to ensure there is traceability in the relevant data-to-theory connections being proposed by the other researchers (Gioia et.al 2012). This third party, however, should be well informed of Grounded Theory, data analysis and the subject material.



## APPENDIX A – LITERATURE RESEARCH

| Research based on project focus questions (source link/reference) – title of source  | Source content of reference – which content is relevant in the source                              | AHRC relationship – correlate to their previous research and section they talk about it in their submission paper  | AHRC human rights article reference<br>E.g. Article 17 of the human rights legislation |
|--|--|--|--|
| What should the focus area and focus demographic for the project be?   | Bull 2010<br><br>The Always Connected Generation   | Page 20 – children and young people in Australia commonly now spend a significant proportion of their daily lives online   |  |
| What should the focus area and focus demographic for the project be?   | Kimball 2018<br><br><i>Smartphone Syndrome: A Millennial Mental Health Crisis</i>                  | Page 20 – 76% of women under 30 years of age, have reported experiencing online harassment   |  |
| What should the focus area and focus demographic for the project be?   | Bland et. Al. 2012<br><br>Stress tolerance: New challenges for millennials college students.       | Page 16 – Most children are treated as adults when they use such technology and this can have potentially negative consequences.   |  |
| What should the focus area and focus demographic for the project be?   | Geher 2017<br><br>The mental health crisis is on the internet generation                           | Page 29 – job screening algorithms that exclude applicants with mental illness   | Anti-discrimination Law<br><br>Office of the eSafety Commissioner                      |
| Should we take a different approach and validate the questions by studying the voices of the people who are impacted.                          | Perrin 2018<br><br>Social Media Usage: 2005-2015   | Page 19 – new technologies do not inevitably threaten human rights, but the problem of dual affordances, or multiple uses, is particularly acute with new technologies<br><br>Page 30 – undermine Western liberal-democratic systems<br><br>Page 31 – ACCC inquiry to digital search engines | Privacy Act<br><br>Anti-discrimination Law   |
| Should we take a different approach and validate the questions by studying the voices of the people who are impacted.                          | ABS and Census Data 2016-2018  | N/A  |  |
| What should the focus area and focus demographic for the project be?   | Anderson, Rainie 2012<br><br>Millennials will benefit and suffer due to their hyperconnected lives | Page 15 – Unprecedented demand for personal information  | Privacy Act  |
| What happens to us as a society when, or if, technology begins to supersede human capabilities. How will this impact our progress and economy? | Pew 2012<br><br>Future of Internet – Young Brains  |  |  |

## APPENDIX B - BACKGROUND TO THE APPROACH – GROUNDED THEORY

Australia's perspective that has been sought by our research, and the AHRC, will inform the steps forward in developing a human rights framework that incorporates use of technology.

The knowledge sought by our research is dependent upon interpretations of the information provided by interview participants. These participants will use their own words to explain concepts and frames of reference (Orlikowski & Baroudi 1991). These labels they use are artificial creations that do not exist apart from human consciousness (Burrell & Morgan, 1979; Orlikowski & Baroudi 1991).

The use of focus groups was employed to gauge a wide range of individuals opinions towards the impact of technology on society. To avoid experimental bias, a small preliminary group was used with open ended questions to validate the areas of focus. Thus, informing the survey format and style.

It is important to note that members of the focus groups influence, and are influenced, by the responses of one another. As a result of sociological factors, people behave differently when they are in groups than when they are alone (Stewart and Shamdasani, 2015). Research on group dynamics suggests that greater homogeneity is associated with greater cooperation and willingness to communicate. Considering this, we have decided to conduct the interviews using those from the same education backgrounds (in the focus groups) and then compare results between the groups.

Grounded Theory has been identified as the best approach to underpin the data collection and analysis. At a high level this covers four main stages (Bernard & Ryan, 2010):

1. Coding
2. Concepts
3. Categorising into clusters of theories
4. Theory

The proceeding sections details the activities we have performed to date using Gioia's method of Grounded Theory (Gioia et al, 2012).

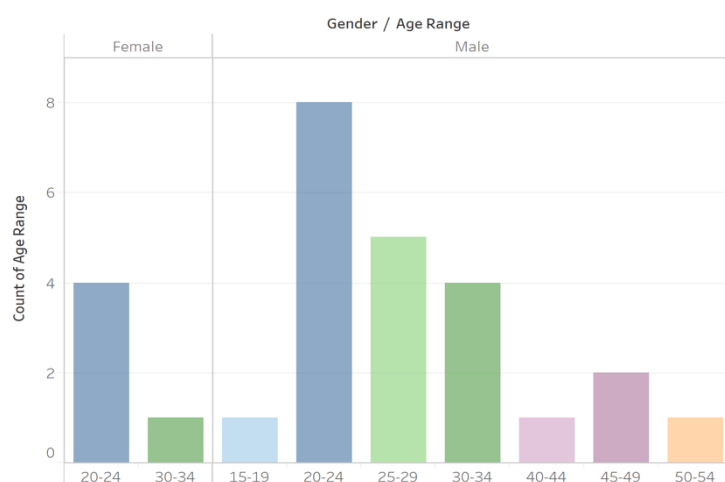
## APPENDIX C – DATA ANALYSIS OF PARTICIPANTS AND THEIR RESPONSES

### Data Collection

All data collected, including participant demographics, was done by the use of a recording device during that participants particular focus group session. This was then transcribed using grounded theory and placed into high- and low-level themes. By paying particular attention to sentiment, columns were created in the dataset to further classify a negative, positive and neutral comments/opinions towards the subject matter. Our focus group participants came from a wide range of age groups and industries.

### Gender and Age of Participants

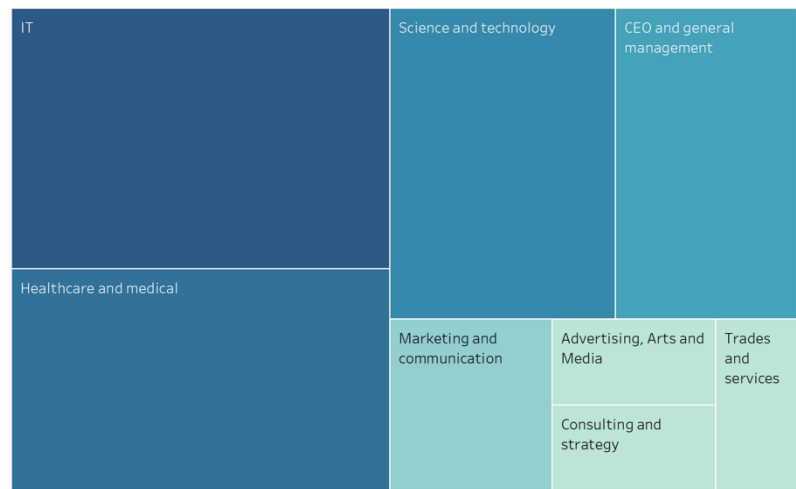
Female versus Male



Participants ages ranged between 18 to 50 years. The majority of participants fell under the 20-29-year-old category for men and 20-24-year-old category for women. There was a significant imbalance presented with gender classes. In this particular instance males were more available to participate in focus group sessions than females. Following analysis of responses between gender classes we do not believe that this factor has a significant influence over our results. The participants included students, professionals, researchers and academic.

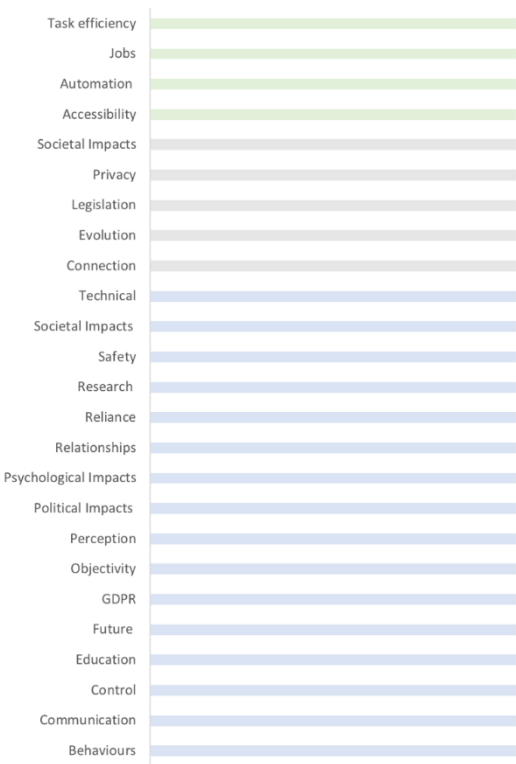
Workforce Background of Participants

Workforce background



In aiming to get a broad sense of the current landscape on societies views towards technology, participants have been selected from a wide range of backgrounds. They included individuals who were students, professionals, researchers and academics. IT and healthcare and medical were the most surveyed, followed by science and technology and CEO and general management. Then, marketing and communications and finally a select few from media and arts, consulting and strategy and trades and services. It is important to note that the most highly interviewed professions were ones which would have a good understanding of technology and exhibit high use of it for their jobs.

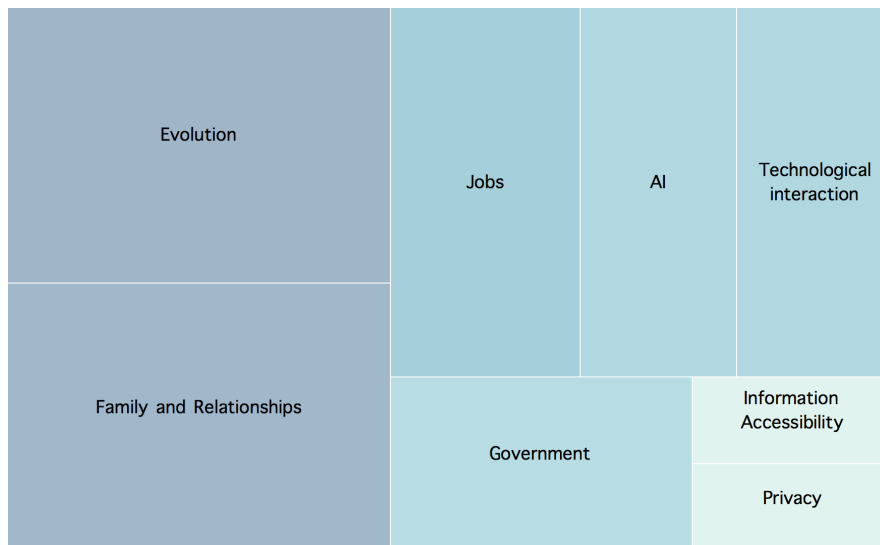
Sentiment



The following is a list of the 25 low-level themes and their overall sentiment collected from all focus groups. 4 themes were positive (green), 5 were neutral (grey) and the remaining 16 were negative (blue). Overall the responses received show an overall negative sentiment by 80%.

Please see the following link of a video made which summarises the overall sentiment of the responses received: <https://youtu.be/OvC1QZgqzs0>

## High Level Themes



Eight high-level themes were discovered during analysis of text data. These were;

1. Evolution
2. Family and relationships
3. Jobs
4. AI
5. Technological interaction
6. Government
7. Information accessibility
8. Privacy

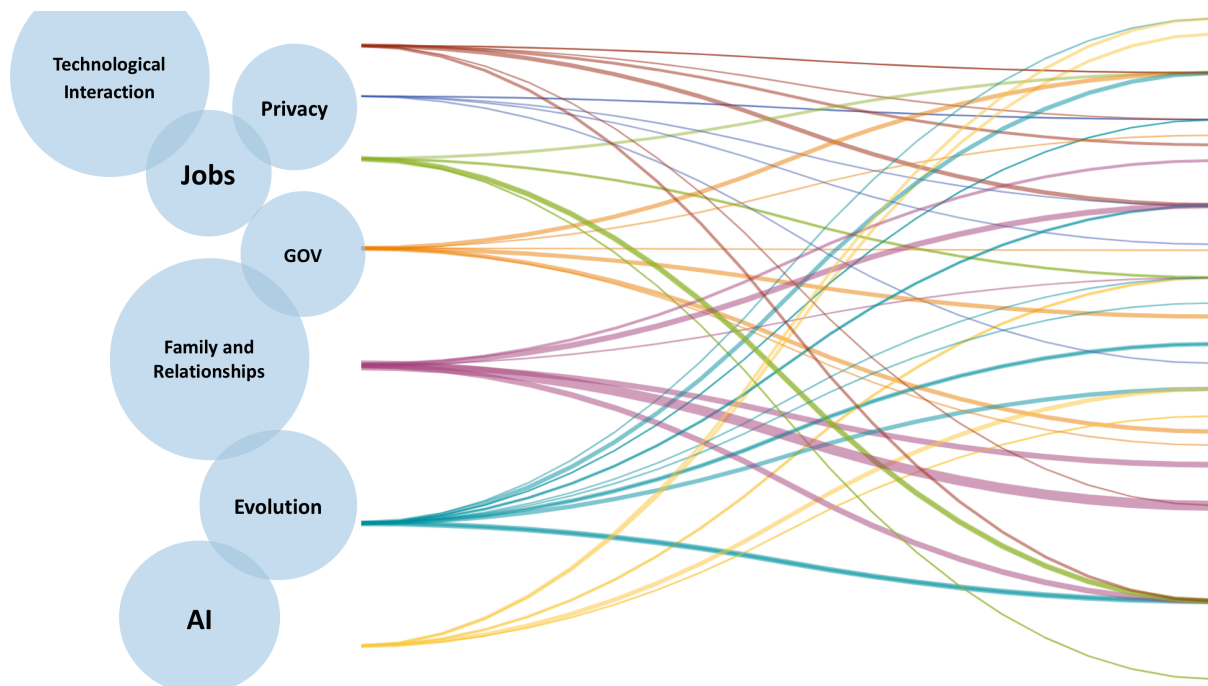
Evolution and family and relationships were the top two themes which were discussed frequently and across all focus groups naturally.

## Low Level Themes



Several low-level themes were discovered which fit within the high-level themes. A change in behaviours was the biggest low-level theme which stretched across all high-level themes, followed by psychological impacts and then societal impacts.

## Relationship Between High- and Low-level Themes



When visualising our results, we found that many of the low-level themes were repeated across the high-level themes and produced the matrix seen above. For example, within the high-level theme of evolution, low-level themes of behaviours, psychological impacts, safety concerns, jobs, perception, societal impacts, objectivity and future were discussed. One participant mentioned that the evolution of technology has made our lives much simpler and referred to the older generations as being backwards and archaic due to the inconveniences that would have been present if not for technological development – stating communication methodology of posting a letter and writing an email as an example of the benefits of evolution.

The fear more generally is that we will get a slow but definite rise in unemployment which will have a tipping point effect on the economy and society at large. General AI which is the ultimate goal, we are a long way away but things which used to require an intelligent person to do are now imminently replaceable.

There is an understanding that Machine intelligence is copyable, our entire social construct is based on the fact that people are born, they have no knowledge, they go to school, university, they acquire skills and a profession, and they do that until they don't do that anymore. If you teach a machine X, you can copy that machine and that machine can do X as well and it didn't go to school or have to spend 25 years doing it.

The positive aspect centred around the ability to have a human connection which was previously lost due to distance. Being able to communicate with close friends and family members easily was a key factor. The ability to access information was also highlighted, we now have access to the world's pool of knowledge in our pockets, and we can reach out and speak to anybody and break through barriers of constrained society.