

# Statistics NZ – Data Summit 2018

# 27-28 September 2018

Report on the event

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## Introduction

1. This report includes notes on the main speeches given at the Data Summit 2018, organised by Statistics New Zealand. The event ran for two days, on 27 and 28 September 2018, at Te Papa. The first day had speeches and some audience interaction. The second day was an 'unconference' style event, where people could make suggestions about what they'd like to talk about, and people wanting to talk about the same topic would get together to have a discussion. Contrary to the programme, the discussion on Indicators Aotearoa New Zealand took place throughout the second day, not just at 2pm.

Day One				
9:10 am	James Shaw MP, Minister of Statistics	What matters gets measured		
9:25 am	Liz MacPherson, Government Chief Data Steward (and CE, Statistics NZ)	We can, but should we?		
9:55 am	Dr Cathy O'Neill, author and algorithm auditor	Weapons of Math Destruction		
11:30 am	Liz MacPherson	Data Sovereignty		
	Dr Jonathan Dewar, Executive Director, First Nations Information Governance Centre, Canada	First Nations perspective		
	Professor Tahu Kukutai, Te Rūnanga Tātari Tatauranga & Te Whare Wānanga o Waikato	New Zealand perspective		
2:00 pm	Assoc. Professor Amy Fletcher, Department of Political Science and International Relations, University of Canterbury	AI – automation and employment in the US		
2:45 pm	Assoc. Professor Colin Gavaghan, Faculty of Law, Otago University Professor James Maclaurin, Department of Philosophy, Otago University	Al technologies: Maximising benefits, minimising potential harm		
4:00 pm	Liz MacPherson Cathy O'Neill Jonathan Dewar John Edwards, Privacy Commissioner Sam Daish, GM Data Innovation, Xero	Panel discussion: We can, but should we?		
Day Two				
9:00 am	Mike Riversdale, MC for Day Two	Unconference		
2:00 pm	Statistics NZ officials	Indicators Aotearoa New Zealand		

## **Event Programme**

## Day One

## James Shaw MP, Minister of Statistics – What matters gets measured

2. The Minister welcomed people to the event. He said that trust, confidence and transparency are important to him and to the government, and that people are less likely to trust algorithms that aren't transparent. (Foreshadowing the release a few weeks afterwards of the report on use of algorithms in government.). Said that Statistics NZ are ahead of other agencies on data governance, that they are doing Treaty-based co-design. Announced the consultation on the new statistics legislation.

# Liz MacPherson, Government Chief Data Steward and Chief Executive of Statistics New Zealand – *We can, but should we?*

- 3. Collectors and users of data must keep in mind that behind every data point is a person, a family, a business (he tangata, he tangata, he tangata). In terms of the ethical use of data, it is critical for government to find the balance between innovation and protection. And constantly calibrate that balance. Must constantly ask 'we can, but should we?'
- Government needs to work on re-empowering the communities from whom the government gathers the data. Government must challenge itself to ensure 'populations of interest' are part of the conversation.
- 5. Latticeware and quantum computing can be used to protect against hacking, but need to be aware of it being used against 'us'.
- 6. When we talk about ethics, whose ethics? At least three schools of ethics in the western world. How are they encoded in legislation, for example in the new State Sector Act, currently under consultation? For example, how to recognise the Treaty relationship. We all need to challenge ourselves to think about what we mean by data ethics.
- 7. A whakatoki to finish with: if we take our data and we put it together we can improve the wellbeing of our nation.

## Dr Cathy O'Neill, algorithm auditor and author of Weapons of Math Destruction

- 8. Dr O'Neill started by explaining that Google doesn't have a model of truth, but of relevance. This is what has led to holocaust denial websites being the top 8 our 10 results when searching for information about the holocaust. She then asked us to consider how much trust we should put in a Google Home device's search results when you ask it 'what does a blue whale sound like?'
- 9. An algorithm is something that shouldn't be mystified as we all do them in our heads all the time every day: what we do with historical data (memories), and our surroundings. Another example would be 'what clothes should I wear today?', which uses factors such as 'what clothes do I have?', 'which of those clothes is clean?', and 'what is the definition of success today?' i.e. to remain dry, to look sexy, or to convey a sense of professionalism. In terms of cooking, we curate our data on ingredients, blinding ourselves to ones we don't want to use.
- Therefore, when anyone builds an algorithm, it is built to their definition of success, which may not be yours. And the person in power gets to define what success looks like.
- 11. Dr O'Neill talks about problematic algorithms as WMDs, meaning:
  - Widespread it affects a lot of people, and/or it has significant effects
  - *Mysterious* it uses a scoring system, and these are most commonly kept secret
  - Destructive the results are error-strewn, resulting in poor outcomes for the people affected.
- 12. Because the scoring systems are often secret, it means that it's almost impossible to appeal the results of a decision affecting a person. As these poor outcomes are scaled up, we see that these systems create society-level feedback loops, which are actually the most important results of use of algorithms. The point here is that data scientists are creating the future as well as predicting it. One simple example is someone's credit history being used to inform decisions about their future eligibility for a number of things.

- 13. Dr O'Neill presented the example of a teacher in Washington DC who was sacked because she was 'not adding enough value' according to an algorithm that drew on standardised testing to create a model of how the performance of poor kids should be lifted in comparison to rich kids (the 'closing the gaps' policy). The formula for assessing performance was kept secret, in spite of the uses to which the results were put, such as the New York Post publishing a list of the '10 worst teachers'. In fact, O'Neill said, analysis of the data showed the results were as meaningful as random noise. 200 other teachers had also been sacked on the basis of these poorly thought through systems for assessing performance. This is destructive not only for individual teachers, but also for the education system as a whole, as teachers left the public school system, or moved to states where this assessment method was not used.
- 14. O'Neill then gave an example of psychometric tests being used, even for minimum wage jobs in places like Walmart. (She suggested that its use for these kids of jobs may be contrary to the Americans with Disabilities Act.) This had been challenged by a parent who was unhappy at their son being excluded from a job (because he was autistic, if I recall correctly), which had exposed the problems with algorithms being used in the hiring process. Any algorithm builds on historical data and the chosen definition of success.
- 15. But in addition to the problems already highlighted about who chooses the definition of success, there is bias in the data itself, and the algorithms thereby automate and propagate and exacerbate the past. Dr O'Neill suggested that, for example, if you took the data on 'successful performers' at Fox News and applied it to the hiring process, you would see that based on indicators for things like tenure and pay rises, it wouldn't be a surprise if future hiring practices ruled out employing women, as historically older, white, men (like Roger Ailes) are the characteristics of what 'successful' looks like.
- 16. Algorithms used in policing have been very problematic in the US. The 'theory of broken windows' used to inform decisions on where to send police resources has been shown to be racist, and biased against poor, black neighbourhoods. The theory suggests that if you arrest people for non-violent

crimes, you can avoid violent crimes being committed in the future. The problem with this is that police forces don't have crime data, they have arrest data. Police forces are therefore using historical arrest locations to replicate the pattern in the future.

17. Dr O'Neill then showed the problems this can cause in relation to arrests for smoking marijuana. While the statistics show that more white people than black people smoke pot, the arrest statistics show far more black people being arrested for possession of marijuana than white people.



- 18. The conclusion draw by O'Neill therefore is that 'predictive policing' is in fact predicting the police, and repeatable police behaviour of arresting poor black people, rather than the claim of allocating police resources to where they will be needed.
- 19. This gets worse, O'Neill said, when people's 'recidivism scores' are given to judges to inform sentencing decisions, where someone has been arrested within two years of leaving prison. These have demonstrably led to longer sentences, and include factors such as having been sacked from a job, being suspended or expelled from school, and reliance upon 'social assistance'.

Criminal History	
1. Any prior adult conviction	is: Yes
4. Three or more present of	ifenses: Yes
6. Ever incarcerated upon o	conviction: Yes
<ol><li>Ever punished for instituti</li></ol>	ional misconduct: Yes
Education/Employme	nt
11. Currently unemployed:	Yes
13. Never employed for a fu	ull year: Yes
14. Ever fired: Yes	
17. Suspended or expelled	at least once: Yes
Financial	
22. Reliance upon social as	sistance: Yes
Family/Marital	
24. Non-rewarding, parenta	I: A relatively unsatisfactory situation with a need for improvement
26. Criminal-Family/Spouse	a: Yes

Worse still, the recidivism score includes the person's 'attitudes and orientation'. If the person's attitude is deemed to be 'poor, toward supervision', it increases their likelihood of being sentenced to prison again. O'Neill described this as Orwellian.

### Accommodation

Unsatisfactory a relatively unsatisfactory situation with a need for improvement
 3 or more address changes last year. Yes
 High crime neighborhood: Yes

### Leisure/Recreation:

31. Could make better use of time: A relatively unsatisfactory situation with a need for improvement

### Companions

- 32. A social isolate: Yes
- Some criminal acquaintances: Yes
   Absence of anti-criminal acquaintances: Yes

### Alcohol/Drug Problem

- 37. Alcohol problem, ever: Yes 38. Drug problem, ever: Yes 41. Law violations: Yes 42. Marital/Family: Yes 44. Medical: Yes

#### Emotional/Personal

- 46. Moderate interference: Yes 47. Severe interference, active psychosis: Yes 49. Mental health treatment, present; Yes

### Attitudes/Orientation

Supportive of crime: A relatively unsatisfactory situation with a need for improvement 54. Poor, toward supervision: Yes

21. As O'Neill pointed out, this system – widely used across the USA - is highly likely to lead to a downward spiral of circumstances and consequences for anyone sentenced to any period of incarceration.



- 22. The data scientists who built these algorithms are optimising for 'accuracy', which O'Neill said was not the right way to measure them. Not only do we need to understand the data being used to build the algorithm, but also to analyse its sensitivity to individual factors changing.
- 23. O'Neill then went on to talk about how a person's zip (or post) code is a proxy for race in a segregated society, and how this can affect things like a person's credit score and therefore their ability to access credit. O'Neill described people's credit scores as 'secret law' in the US, and emphasised that people need to know what an algorithm is going to tell decision makers about you if you can't pay all your bills. Which bill should you prioritise payment of if you can't pay them all?
- 24. Given the size and transnational nature of a lot of companies, O'Neill said that we must have national or international regulators who can audit the fairness of algorithms that affect us. But whose definition of 'fair' outcomes should govern this scrutiny? Dr O'Neill said it should not be that of the data scientists, but of all of us, that it's a debate society needs to have.
- 25. The reason for needing to create regulators for this is that a 'fairness constraint' is expensive for businesses trying to maximise profit, and that

therefore companies will not volunteer for these audits. We must therefore legislation and check on compliance.

- 26. Dr O'Neill concluded by saying she hoped that we come to terms with the need for regulation and treaties on this issue. Some bureaucracies will be more willing to be open about their algorithms than others (such as insurance and banking), but that we must demand accountability and transparency.
- 27. In the question-and-answer session after her speech, the following were put to O'Neill:
  - a. Is benign surveillance possible?
    - i. O'Neill doesn't know of an example of good practice in the US. The only possible one is around self-driving cars, but this is only because it relates to a visible potential problem: the bigger problem is the invisible stuff around insurance, credit and jobs. She has started an algorithmic auditing company, but only has a few clients because companies don't want the bad news.
  - b. What ethical education do data scientists need?
    - i. Non-superficial
    - ii. Her ethical matrix
    - iii. We need use-case centred projects how will it affect humans, what if it fails? O'Neill indicated that she likes Google's navigation algorithm data.
    - iv. The onus should not be on us to challenge this it is not our individual responsibility – it should be on the companies (and governments).
    - Why don't we use humans side-by-side with algorithms for 4 years to learn what biases exist in both, and what feedback loops and nuances need to be introduced?

28. The main thing that Dr O'Neill said she wanted the audience to take away from her talk was that we are living in a pipedream of hype about data use and predictive analytics, and that we need to be more slow-moving and deliberate with the introduction of these techniques.

# Liz MacPherson, Government Chief Data Steward and Chief Executive of Statistics New Zealand – *Data Sovereignty*

- 29. After the morning tea break, the Liz MacPherson provided a brief outline of Statistics New Zealand's thinking about the issue of data sovereignty. This turned out not to be about keeping New Zealander's data within the country where regulators such as the Privacy Commissioner have jurisdiction. Instead, it concerned the issue of the rights of indigenous people to have control of how their data may be collected and used.
- 30. Ms MacPherson said that a common trap that government agencies fall into is to develop a framework and then consult on it. Statistics NZ is not doing this. Instead, it is beginning with co-design work with an Iwi leaders group to develop a process for considering the issues, and only after agreement on this has been reached will they move on to producing the end outcome of an agreed approach to the collection and use of data about Māori.

## Dr Jonathan Dewar, Executive Director of the First Nations Information Governance Centre, Canada – *First Nations Perspective*

- 31. All of Dr Dewar's slides are appended to the end of this report.
- 32. Dr Dewar began with some background history. The Canadian government had been shamed into building the necessary institutions to respect and give effect to data sovereignty for First Nations. In 1990 there had been a struggle over a piece of land (known as the 'ochre resistance' or the 'ochre crisis'). This had led to a Royal Commission on indigenous peoples' experiences. The Commission made 440 recommendations, almost none of which were acted on. Three institutions were created: the National Aboriginal Health organisation, the Aboriginal Healing Foundation (to deal with the legacy of residential schools that indigenous children were forced into), and the Truth and

Reconciliation Commission. All three institutions have now been wound up. A key question for First Nations arising out of these processes was whether governments will only act because they have been shamed, or because they have looked at the data and evidence?

- 33. Dewar spent a considerable amount of time emphasising that the First Nations Information Governance Centre does not set centrally agreed policy on how the data of First Nations (i.e. indigenous) peoples should be collected, used and shared. He stressed the heterogeneity of views and approaches amongst different First Nations groups and that the Centre's vision that every First Nation will achieve data sovereignty in alignment with its own distinct worldview. The Centre's mission is to assert First Nations' data sovereignty and support them in developing governance and management systems, playing a facilitative and enabling role. Under the Indian Act, there are 634 First Nations recognised by the government, and Dewar made clear he was not talking about Inuit and Métis peoples.
- 34. Because of the large number of First Nations, it is therefore important for the Centre to recognise and act upon the diversity of Nations and their views.
- 35. Dewar suggested it was important to keep in mind for accountability purposes that tools are simply an extension of the human that wields it. One of the core objectives of the Centre is that its tools are effective, adaptable and accessible.
- 36. The Centre's core principles with regard to data are:
  - Ownership
  - Control
  - Access
  - Possession
- 37. The Centre seeks to benefit the communities it serves while minimising harm, in addition to respecting self-determination and preservation and development of the community's culture.

- 38. The development of the OCAP principles led (via negotiations) to a pilot longitudinal health study in 1997, designed to collect information on well-being and the social determinants of health. As a result, the Regional Health Survey is now considered *the* reliable source of information about life in more than 630 communities across Canada.
- 39. However, although the Centre got funding to do the main survey and side projects, Dewar felt that this approach was backwards: the work was shaping the organisation, instead of the organisation shaping the work. Codevelopment of the surveys with government had also not been as good as it could be.
- 40. Dewar talked about a couple of the other surveys conducted of First Nations communities, before moving on to talk about the procedures and controls at the First Nations Data Centre. This seemed useful to compare with Statistics New Zealand's Integrated Data Infrastructure.
- 41. At the First Nations Data Centre (FNDC) in Ottawa, de-identified, record-level data is accessible in person. Access through the Regional Centres of the First Nations Information Governance Centre might be forthcoming in future.
- 42. There are mandatory data access contracts and confidentiality agreements, and researchers can only access the variables and data required for their specified analyses (i.e. they seem to be prohibited from trawling the data sets notwithstanding the fact they have been recognised as bona fide researchers). Other policies and procedures are similar to those at Statistics Canada.
- 43. Included in the on-site protocols for the Data Centre are signed agreements, an orientation process, workstation and file security, and conformance to the OCAP principles.
- 44. One of the key things however, is that community-level data is only available with the consent of the community, and regional-level data is available with the consent of the region. The OCAP principles-based approach lives and breathes

on the ground through the Nations who determine for themselves what OCAP means for them and their data.

- 45. The application form that researchers have to complete before it is considered by the Centre's Data Steering Committee include the following:
  - Research purpose
  - Analysis method
  - Survey and variables needed
  - Who will have access to the tables or data
  - Benefits and risks
  - Whether the project has the support of First Nations communities or organisations
  - Expected outputs
  - Dissemination of findings
- 46. Dr Dewar concluded by saying that the First Nations Information Governance Centre had been awarded \$2.5 million in the 2018 Budget, to design a National Data Governance Strategy, and to coordinate the establishment of Regional Information Governance Centres.

# Professor Tahu Kukutai, University of Waikato – *Māori Data Sovereignty: Tikanga in Technology*

- 47. Professor Kukutai began her talk by outlining some key differences in relation to the position of Māori in New Zealand versus Canadian First Nations. New Zealand is more ethnically diverse than the USA and Canada (she said), but on the other hand, there is only one indigenous language here. Another key difference is that, unlike Canada, Māori don't have jurisdictional control of geographical areas under the Treaty of Waitangi.
- 48. Defining some of the key terms, Prof Kukutai said that while 'data sovereignty' meant that data is subject to the laws of the nation within which it is stored, 'indigenous data sovereignty' means that the data is subject to the laws of the

nation from which it is collected (including tribal nations). Beyond this, 'Māori Data Sovereignty' refers to the inherent rights and interests that Māori have in relation to the collection, ownership and application of Māori data. This was in turn defined as 'information or knowledge in a digital or digitisable form that is about or from Māori peoples and our environments, regardless of who controls it. This includes data generated by Māori, data about Māori (generated by others, e.g. the IDI) and data about Māori resources (which could be generated either by Māori or by others).

- 49. The Māori Data Sovereignty Network, Te Mana Raraunga, advocates for the development of capacity and capability across the Māori data ecosystem, including:
  - Data rights and interests
  - Data governance
  - Data storage and security
  - Data access and control
- 50. The Network is working on a roadmap for data. They are designing paths, but do not yet know where they will lead. Key questions to be considered are:
  - Whose data?
  - Whose ethics?
  - Whose decisions?
- 51. The Network aims to embed tikanga into regulatory institutions and models, where tikanga concerns 'what is right, truth or correct' for the circumstance. It aims to develop protocols for each situation.
- 52. Another issue the Network is grappling with is how community concerns can transcend the model of data protection for individual people.

- 53. A question for Māori in New Zealand is why they would expect now to be any different, when control over the gathering and use of data and information has always lain with, and worked for, the powerful? Government priorities have always taken precedence over Māori data needs, which is what has led to situations of top-down surveillance. Prof Kukutai said that Māori need a disruption of power relations in terms of data collection and management.
- 54. The Network is also considering the question of how indigenous people implement control over the data. It is clear that who holds the data is key, and Prof Kukutai suggested that Facebook might know more about Māori people's whakapapa than some people know themselves.
- 55. Outlining principles of control, jurisdiction, self-determination, stewardship, restrictions, ethics and consent, Prof Kukutai suggested that the key issue is respect: the collection, use and interpretation of data should uphold the intrinsic dignity of Māori individuals, groups and communities. There are problems with relying on the Anglo/European model of data and privacy: what does collective privacy look like?
- 56. The professor also referred to the 5Ds of Australian indigenous data (disparity, deprivation, disadvantage, dysfunction and difference see <u>https://press-files.anu.edu.au/downloads/press/n2140/pdf/book.pdf</u>), and the fact that those who control the data control the narrative.
- 57. In this context, Prof Kukutai asked whether de-identification of people in the IDI is sufficient, particularly for 'target' groups that government agencies develop policies and programmes about and for? As the government develops a 'well-being budget' are we measuring wellbeing or risk and calling it something else?
- 58. In the question and answer session following these three speakers, Prof Kukutai was asked whether New Zealand needs an equivalent to the First Nations Information Governance Centre. She replied that building capacity is the key thing, and that the question is not 'this or that', but an 'and + and'. She stressed the difference between a te ao māori lens on data versus 'māori data'.

- 59. Dr Dewar chipped in to say that the FNIGC is funded to training and capacity building on data governance and the OCAP principles (in addition to the Data Centre services).
- 60. A further question asked whether it is possible to have data sovereignty while making use of 'cloud' services. Dr Dewar replied that yes, it is possible, and that some First Nations peoples have built this capacity. Liz MacPherson said that it would be nice if the larger cloud providers also provided these facilities in New Zealand.
- 61. In relation to consent, Prof Kukutai highlighted the difference between informed consent for the first use of the data gathered, and the much weaker (maybe implied) consent for re-use and secondary purposes. Liz MacPherson pointed to the idea of a 'greater good' purpose for using data that has been collected, but stressed the importance of asking whose 'greater good' is being served.
- 62. In response to a question about whether First Nations collecting their own data was a path that Māori should adopt in New Zealand, Liz MacPherson endorsed the Māori community using their data to tell their stories.

## Associate Professor Amy Fletcher, University of Canterbury – Artificial Intelligence, Automation and Employment in the United States: Towards Augmented Democracy?

- 63. Following the lunch break, Associate Professor Amy Fletcher from the University of Canterbury was the first speaker in a session about Artificial Intelligence. The guiding question for her presentation was 'How do we navigate the uncertainty of new technologies to reinvigorate the democratic life of the country?'
- 64. Prof Fletcher began by contrasting two quotes. The first was from Jon Katz of *Wired* magazine in 1994:

The Digital Nation points the way to a more rational, less dogmatic approach to politics. The world's information is being liberated, and so, as a consequence, are we.

65. The second quote was from R. U. Sirius (aka Ken Goffman) in 1997:

As more and more people get a voice, a voice needs a special stridency to be heard above the din. On the street, people tolerate diversity because they have to – you'll get from here to there if you don't get in anybody's face. But the new media environment is always urging you to mock up an instant opinion about The Other... You can be part of the biggest mob in history. Atavistic fun, guys. Pile on!

- 66. As Prof Fletcher observed, Katz's optimism had not aged well, whereas Goffman's view had proved accurate.
- 67. After several slides on the accelerating pace of increases in computing power, the different ages of industry, and types of innovation (Breakthrough, Disruptive and Game-changing), Fletcher posed the question: If disruption is the new normal, how do policy makers deal with the impact of this on communities?
- 68. The current estimated timeframe for when 'high level machine intelligence' unaided machines – can accomplish any given task better and more cheaply than humans is 45 years. By 2053, experts estimate that machines will be able to work as a surgeon. Before that, they estimate that machines will be able to work in retail by 2031, drive a truck by 2027 and outperform human language translators by 2024.
- 69. The World Economic Forum had published a report in the week of the Data Summit estimating that 58 million more jobs would be created than lost in the coming changes, but that there would be a lot of 'churn', as 54% of people will need re-training.
- 70. Fletcher then showed a photo of a *New York Times* article from 1928 about industrial output increasing during a period of high unemployment, indicating that concerns about the impact of new technologies on people's ability to work are not new. Fletcher asked however, whether it is the technology that is the issue, or are there other issues that we're not paying attention to? In spite of the instances of historical concern about workplace automation, Fletcher

suggested we need to be cautious about relying on the past to help predict the future, as technology such as machines learning, 'thinking' and evolving have not been contended with until now.

- 71. After several more slides about changes likely to occur in various workplaces, Fletcher suggested the key questions are:
  - How can workers be supported to adapt to new technologies and new industries?
  - Will workplace protections survive?
  - Do we need to consider Universal Basic Income or other mechanisms as a safety net for periods of job disruption?
  - How can society support those upon whom the risks of technology transformation fall most heavily?
- 72. Following this, Prof Fletcher's presentation pivoted to talk about something she called 'Augmented Democracy'. This term was not defined by Fletcher, although there are articles online which use the term. She suggested that the key principles to adopt are processes which are Fair, Transparent, and Accountable.
- 73. Prof Fletcher then presented what she described as 'A Blueprint for Augmented Democracy'. This included the following:
  - Develop technological citizenship (i.e. improve people's knowledge of coding, so they can question proposals etc)
  - Increase diversity within the technological sector
  - We are not all starting from the same place
  - Adapt education to the new world of work
  - Remember why democracy matters and remember to 'make the case' consistently

74. Prof Fletcher concluded by suggesting that micro-credentials (from education providers offering courses on platforms such as Coursera and EdX) are interesting and worthwhile, but have the potential drawback of putting students in the position of chasing skills while ignoring the bigger strategic picture of what is needed for a career.

Professor James Maclaurin and Associate Professor Colin Gavaghan, University of Otago, Centre for AI and Public Policy and Centre for Law and Emerging Technologies – *AI technologies: Maximising benefits, minimising potential harm* 

- 75. The slides for this talk are appended to the end of this report.
- 76. A key early point of this talk was that the nature of data is changing, and that Artificial Intelligence (AI) is a significant cause of this change. Whereas data has historically been understood to be static, given for a purpose, and susceptible to correction or deletion, now it is extracted in addition to being given; it can be inferred; and we have less knowledge about what data others hold about us, what they hold it for, and how it has been constructed. This has led to a situation where it is hard for a person to ask a company to correct or delete data if they don't know it exists, or don't understand what it means.
- 77. When data was static, the ability to correct or delete it led to legislation that created obligations on the data-gatherer and user for it to be accurate, and to only do with it what the data-subject had been told were the purposes for its gathering. This is a quasi-contractual relationship.
- 78. However, now that data about us is being created from inferences drawn from data we have supplied as well as the results of algorithmic processing of this data, this relationship has shifted, and the data-subject is in a weaker position. Data is 'a form of wealth that is very unevenly distributed'.
- 79. It is not just the individual person for whom this more diverse data ecology can be problematic: the inaccuracy, bias and lack of transparency are problems for governments and businesses too. It's just that organisations have different levels of motivations to solve those problems. Since our data is 'exchanged' for

essential services by effective monopolies, their motivation to solve the problems may be quite low indeed.

- 80. Maclaurin also suggested that AI is 'democratising data' for both individuals and organisations, in the sense that software tools mean it is no longer necessary to be a statistician to use statistics for very complex tasks. Bound up with this however, is that the person using these tools may not know very much about how, or how well, the tools are 'making' decisions.
- 81. Maclaurin then provided some background to the creation of the Centre for Artificial Intelligence and Public Policy at Otago. He sketched out the domain of social, ethical and legal research into AI, noting that numerous governments around the world have launched AI strategies or work programmes in the last two years.

Collection, consent, use of data	Fairness / accuracy	Effects on en profes	mployment, sions	Economic & social
	<b>Data Sovereignty</b>			inequality,
Effects on politics,		Effects on productivity, the economy		polarisation
democracy, free speech	Human Rights			Equity of
			Privacy.	access
Autonomy		Explainability	surveillance	
Inclusion	Regulation, liability, institutions	Governance di		Bias, scrimination
Control, human factor	Control, Trust Recreation, human factors family life, social interaction		en, e, action	Effects on: Health, Education training, Justice policing crime, defence security
liability / responsibility Effects on Māori		Bu inr Effects on wellbeing		siness, ovation

## The domain of social, ethical, legal research into AI

- 82. Professor Maclaurin concluded his half of the presentation by suggesting that the question we want answered is 'How do we use data in a way that is fair, for public benefit, and trusted?'
- 83. Professor Gavaghan then took over and steered the presentation towards regulation and AI. He began with the question of whether we need 'AI law', and

a quote from the US National Science and Technology Council, suggesting that 'the policy discussion should start by considering whether the existing regulations already adequately address the risk, or whether they need to be adapted to the addition of AI'.

- 84. Gavaghan pointed out that some of the problems being grappled with are not entirely new. For example, how we assess the competency of the AI guiding driverless cars may need to be measured against a different benchmark than how humans have performed as drivers, e.g. how well horses coped with riders who were impaired through drunkenness. This was contrasted with a report from the UK that the creators of AI technologies could face prosecution if the tools they develop harm people. A British academic commenting on the government's position suggested that it was unlikely that either the industry's own safety tests, or the regulator, would be able to meaningfully scrutinise the tools in question.
- 85. Prof Gavaghan then suggested that one area where the existing law provides us with tools to assess the application of AI (or machine learning) is the Official Information Act. Section 23 of that law already provides that people affected by a decision made by a department or Minister have a right to the reasons for the decision or recommendation.
- 86. Gavaghan then provided a breakdown of various elements of the reasons for a decision, differentiating system functionality from specific decisions. However, for the department providing the reasons and the person receiving them, there are difficulties in applying section 23 of the OIA to decisions driven by algorithms. We may well need experts in how the software works, experts in the sort of decision being made (criminologists, social scientists, etc). Even then, Gavaghan asked, if the difficulties of explaining algorithms to the public in plain English are such that the department cannot do it, should the department be using the algorithm in the first place? Algorithms that cannot be explained in plain English will certainly bring into question the notion of public accountability for the decisions and actions of State bodies.

- 87. Gavaghan then showed a slide of a statement of principles for the safe and effective use of data and analytics issued by the Privacy Commissioner and Statistics NZ in May 2018.<sup>1</sup> These are:
  - Deliver clear public benefit
  - Ensure data is fit for purpose
  - Focus on people
  - Maintain transparency
  - Understand the limitations
  - Retain human oversight
- 88. Each of these are expanded on in the statement, and Gavaghan focussed on the first, which states:

The use of data and analytics must have clear benefits for New Zealanders. Data and data analytics are tools that support decisionmaking and it's essential that in collecting and using public data, government agencies consider, and can demonstrate, positive public benefits.

This includes:

- considering the views of all relevant stakeholders
- ensuring all associated policies and decisions have been evaluated for fairness and potential bias and have a solid grounding in law
- embedding a te ao Māori perspective through a Treaty-based partnership approach.

<sup>&</sup>lt;sup>1</sup> Principles for the safe and effective use of data and analytics, Privacy Commissioner and Government Chief Data Steward, May 2018. Accessed from: <u>https://www.stats.govt.nz/assets/Uploads/Data-leadership-fact-sheets/Principles-safe-and-effective-data-and-analytics-May-2018.pdf</u>

- 89. Professor Gavaghan then discussed the accuracy and validation of algorithms, the *Daubert* test for admissibility of scientific/expert testimony in court cases from the USA, and the counterpart *Calder* case in New Zealand.<sup>2</sup> He indicated that there are four limbs to the test of admissibility:
  - Relevant and reliable?
  - Scientifically valid and applicable to the facts in issue?
  - Known and potential error rate?
  - Published and peer reviewed?
- 90. These tests will become more significant in administrative law challenges to government decision-making if those decisions result from the use of algorithms.
- 91. Gavaghan then moved on to an example of how the application of a poorly constructed algorithm may have unequal effects. It was unclear whether the example he cited about the algorithm concerning the risk of re-offending was the same as that mentioned by Cathy O'Neill earlier in the day, but Gavaghan quoted from a 2016 article from the US *Pro Publica* news organisation:<sup>3</sup>

Black defendants who did not reoffend... were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45 percent vs. 23 percent).

White defendants who reoffended... were mistakenly labelled low risk almost twice as often as black reoffenders (48 percent vs. 28 percent).

92. This was juxtaposed with a quote from a UK Professor of AI and Robotics, Noel Sharkey, who said on a radio programme in 2017 that *'When it comes to* 

<sup>&</sup>lt;sup>2</sup> Daubert standard, Wikipedia, accessed from: <u>https://en.wikipedia.org/wiki/Daubert\_standard</u>

<sup>&</sup>lt;sup>3</sup> *Machine bias*, Pro Publica, 23 May 2016. Accessed from: <u>https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing</u>

decisions that impact on people's lives – judicial decisions etc – then a human should be accountable and in control of those.'

- 93. Gavaghan also highlighted the risk of apparently quick and easy fixes, citing'The Politician's Syllogism' of:
  - we must do something
  - 'this' is something
  - therefore we must do 'this'
- 94. A further risk to accountable decision-making was highlighted by Gavaghan, with a quote from an academic paper on algorithmic risk assessment policing models. This questioned whether humans might in future prefer to abdicate responsibility for risky decisions to the algorithm, whether this would have a deskilling effect that led to 'judgmental atrophy'. Conversely, the paper asked, would other people resist the intervention of an artificial tool?
- 95. Circling back to the right afforded by section 23 of the OIA, Gavaghan highlighted another academic paper that questioned whether the right to reasons for a decision will provide real empowerment to people, or if it will become a mechanism for passing the buck.<sup>4</sup> Factors pointing to the latter include:
  - Individual data subjects are not empowered to make use of the kind of algorithmic explanations they are likely to be offered
  - Individuals mostly too time-poor, resource-poor, and lacking in the necessary expertise to meaningfully make use of these rights
  - Individual rights approach not well suited when algorithms create societal harms, such as discrimination against racial or minority groups.

<sup>&</sup>lt;sup>4</sup> Slave to the Algorithm? Why a 'right to an explanation' is probably not the remedy you are looking for, Lilian Edwards and Michael Veale. 23 May 2017. Accessible from: <u>https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=2972855</u>

- 96. This final issue, concerning collective problems and challenges is a core problem considering our legislation around the collection and use of data, and around administrative decision-making, is focussed on preventing or rectifying harms to individuals. Gavaghan therefore concluded by circling back to Maclaurin's initial point about the nature of data changing from static (and thus susceptible to pseudo-contractual management) to dynamic.
- 97. In the question session after this presentation, Gavaghan was asked whether the focus on the purpose of data collection and use in the Privacy Act should be retained. He said that it was important to retain this in the revised Privacy Act, as part of the means of gaining people's trust in how their data would be used, but warned that the Act already contains a lot of 'get outs' for using data for something other than its original purposes.

## Panel discussion: We can, but should we?

Panellists: Liz MacPherson, Cathy O'Neill, Jonathan Dewar, John Edwards, (Privacy Commissioner), Sam Daish, (GM Data Innovation, Xero)

- 98. Following the afternoon break, there was a panel discussion.
- 99. Invited to initiate the discussion, Sam Daish from Xero said that the company has 1.5 million customers, which obviously involves a lot of data from Small and Medium Enterprises as well as individuals. The company has a data governance group, and this has rejected 'many' proposals for use of data by the company, because although they would be commercially valuable, they are contrary to Xero's values.
- 100. John Edwards said that part of the problem is that too often the question asked within organisations is not 'We can, but should we?', but 'How can we...?'. He believes there are significant risks of organisations being overconfident of their abilities and that they are moving too early to deploy the technology and use predictive algorithms. Edwards pointed to the *Principles* on data and analytics developed by his office and Statistics NZ (see para 87 above).

- 101. Cathy O'Neill highlighted the lack of understanding of the long-term impact of data analytics and algorithms. It was not contradictory for there to be scientific experiments now as well as long term scrutiny of the results of algorithms being used 'fast and slow science'. She also stressed the importance of putting the 'science' back into 'data science', and not taking things on faith any more. The example she cited related to the invisibility of false negatives when algorithms are used in the job hiring process, but acknowledged that it is expensive to test for this.
- 102. Liz MacPherson talked about the importance of 'explainability', transparency, and provability. In terms of the 'explainability' of an algorithm, 'explainable' to who? [What assumption should be made about the person's reading age?] In terms of provability, how do we know that the algorithms actually work? What external checks and balances should we have to assess claims made of them?
- 103. Should we conduct algorithm design in the same way as policy design? If so, questions likely to be asked are: what are we trying to achieve? What are the likely effects? What are the possible unintended consequences?
- 104. Ms MacPherson stressed that Statistics NZ need to keep talking to people so that the new proposed Data and Statistics Act can be kept under review regarding shifts in technology.
- 105. Dr O'Neill intervened to say that when it comes to auditing algorithms, we should force the open sourcing of the audit methodology (unlike the credit rating algorithms of credit rating agencies like Fitch and Moody's during the Global Financial Crisis of 2007/8). O'Neill predicted we will see an 'arms race' between honest audits and those conducted by cowboy operators.

- 106. On the subject of algorithm impact assessments, Liz MacPherson said that the forthcoming report of the review of government use of algorithms would contain guidelines and toolkits for agencies.<sup>5</sup>
- 107. Prompted by the moderator to respond on the issue of regulating for the collective impact of data gathering and use versus the individual model of the Privacy Act, John Edwards said that there was no political appetite for this, but that he thought it was a shame this was the case.
- 108. Cathy O'Neill asked to whom algorithms should be accountable. The conversation about the ethics of them has to be had at the business level and involve the CEO as well as all stakeholders. Companies could have an ethics board, including stakeholders, and decide on the framework they want to build and apply. This could include deciding what level of false positives and false negatives they could live with for each algorithm. The data scientists should then translate the decisions of the ethics board into code.
- 109. The moderator then asked, given the previously discussed biases reflected in the data, how can organisations ethically use legacy data today? John Edwards said that all the data we have is legacy data. The data we use is often a by-product of the services already delivered, not data gathered for a purpose of achieving a particular goal.
- 110. Asked what they thought audience members should take away from the event, the speakers replied along the following lines:
  - Liz MacPherson said that this issue was about everyone, and that we all

     from Chief Executives downwards need to think about the ethical
     questions.
  - Cathy O'Neill said that we need to expand our definition of how we can know if an algorithm is working.

<sup>&</sup>lt;sup>5</sup> Algorithm Assessment Report, Statistics NZ, October 2018, Accessed from: <u>https://data.govt.nz/use-data/analyse-data/government-algorithm-tranparency/</u>

- Jonathan Dewar posed the question of how far people were willing to go to let Māori lead? What paradigm shifts were people willing to tolerate? What would they find too uncomfortable? He suggested that if all that could be tolerated was something symbolic, then it was meaningless.
- John Edwards said that people in organisations had to ask themselves 'Do we as an organisation remember and recognise the humans that make up the data points?' It was vital to do this to keep issues of kindness and fairness at the forefront of people's minds when doing this work.
- Sam Daish wanted people to ask 'How do we use data and algorithms for good?' He wanted organisations to make sure the data scientists are part of their conversations.
- 111. Asked by the moderator what she would take home to the US that she's learnt from being at the event, Cathy O'Neill said 'Hope'. That there is a community here that wants to make it work, and that she will be looking to New Zealand to be the leaders of the charge.
- 112. Liz MacPherson wrapped up the first day of the event by saying that she had asked her team at Statistics NZ to bring together disruptive thinkers for this discussion. She believes that New Zealand can navigate the issues: it has hope, and we can have trusted institutions if we work together and keep the focus on people.

## Day Two

## Unconference discussion sessions

- 113. At the start of the second day of the Data Summit, the facilitator (Mike Riversdale) explained that people would be able to choose what they wanted to discuss, and write it down on the schedule for different 'pods' (small groups of people sitting around a flipchart stand). Each pod discussion would last 20-30 minutes so people could participate in multiple discussions. Each pod was asked to record their discussion on flipchart paper, completing the sentence that started 'This pod believes that...'
- 114. During the day I participated in discussions about the Integrated Data Infrastructure, Indicators Aotearoa, Linked Data, and Collective Data Rights.
- 115. My photos of the flipchart papers from the various pods are in Appendix 3, and the written-up notes of these papers produced by Statistics NZ are in Appendix 4.<sup>6</sup>
- 116. In discussions about the Integrated Data Infrastructure (IDI), I was pleased to hear concerns being expressed by officials from the Ministry of Social Development, Ministry of Business Innovation and Employment and Ministry of Justice (although it was clear they were speaking personally, not on behalf of their agencies). Amongst their concerns were, 'whose public interest is being served by bringing all the datasets together in the IDI?', and 'whose definition of "public good" is being relied upon to justify the creation and use of the IDI?'. There were also concerns about the effects on segments of the population from more data about them being present in the IDI, such as would be caused by the over-representation of Māori in the justice system.
- 117. An official from the Electoral Commission said that at present there was a legislative bar to adding the electoral role to the IDI, but that this issue will be

<sup>&</sup>lt;sup>6</sup> The write-up produced by Statistics NZ can also be accessed from <u>https://www.data.govt.nz/assets/Uploads/Unconference-write-up-Nov-2019.pdf</u>

discussed by the Justice Select Committee as part of its review of the 2017 General Election.

- 118. There was concern expressed that in building a centralised repository of increasing amounts of data, that Statistics NZ was creating a 'juicy target' for those that might wish to use the tool for purposes other than those envisaged by Statistics NZ.
- 119. An official from the Ministry of Justice explained that the NZ Crime Survey that was conducted through face-to-face interviews did seek consent from participants to their microdata being added to the IDI. The 96% consent rate belied the common fear amongst officials that people would not give their consent. How much the participants understood the implications of their responses being loaded into the IDI was unclear though. The official said that the consent form used by the survey was available on the MOJ website.<sup>7</sup> The official indicated that it would be desirable for agencies to have access to a standardised consent form for adding data into the IDI, and that they believed Statistics NZ should be producing this, but had not done so.
- 120. Some participants in the discussion group felt that Statistics NZ needed to have a web page, with language appropriate for people with a reading age of 12, explaining what the IDI is, in addition to a standardised consent form.
- 121. In a later discussion about collective data rights, one of the questions posed was what happens when an Iwi gives consent for a child's information to be provided to (say) the Ministry of Education, when the child's parents refuse consent for this information to be shared?
- 122. In terms of collectives of people that might enjoy data rights, the following possibilities were identified:

<sup>&</sup>lt;sup>7</sup> This appears to be the relevant web page: <u>https://www.justice.govt.nz/justice-sector-policy/research-data/nzcass/resources-and-downloads/</u> with the consent information to be found on page 92 of the questionnaire, adjacent to the questions seeking the respondent's name, address, date of birth and place of birth: <u>https://www.justice.govt.nz/assets/Documents/Publications/NZCASS-2014-Questionnaire-v5.pdf</u>

- Club
- Gang
- Church
- Company shareholders
- School
- Association
- Community
- Board
- Trade union
- Location
- Minority
- Profession
- Whanau
- Hapu
- Iwi
- Organisation
- 123. The same group discussed why there should be collective data rights. Factors identified included:
  - Issues affect groups as well as individuals
  - Sometimes collective interests trump individual interests
  - Without rights, groups/collectives won't get anything
  - It allows for diversity of worldviews
  - There is strength in numbers
- 124. Discussing what these collective data rights might be, the following were mentioned:

- Consenting (or not) as a collective
- Access
- Use
- Sharing
- Correction
- Disposal
- Transparency about use
- To complain
- To balance competing public interests

## Issues for NZCCL to consider

- 125. The following are some suggestions for NZCCL to consider perhaps, based on what I heard and thought about.
- 126. First, the review of the Statistics Act needs to be considered alongside the revisions to the Privacy Act. The Privacy Commissioner noted that there is little political appetite for creating collective rights relating to data, which is a problem when academics like Maclaurin and Gavaghan have noted that the shifting nature of data means that these two laws will not provide adequate mechanisms to help us scrutinise, query and challenge the systemic issues involved in design and use of algorithm-based decision making, nor deal with issues affecting populations rather than individuals.
- 127. Statistics NZ's commitment to a co-design process with Iwi leaders about collection, use, and sharing of Māori data is welcome. As noted by Dr Dewar, it will be important to see if this goes beyond symbolic proclamations and actually results in substantial shifts in the locus of power and control relating to Māori data: will community data be controlled by communities, as it is amongst First Nations groups in Canada?
- 128. However welcome this co-design process is though, it does also raise the question of how well Statistics NZ is adopting the same inclusive approach to other groups in New Zealand that want to be involved more deeply in designing the ethical and power framework for data. Are we meant to be satisfied with the traditional (and often discredited) processes of consultation paper, public meetings, and submissions on a Bill?
- 129. This inevitably raises the question of what the budget is for this work. Not just to enable the agencies to do their work, but also to facilitate the equal participation of both Māori representatives and other communities. All too often, the budget for an agency to engage in consultation and co-design only facilitates the agency's work and hiring venues etc – it assumes that time-poor and resource-poor groups will magically have their own ability to participate on a level playing field. If the government is serious about wanting to build social

license and trust in its (and the framework for companies', etc) use of data, then I suggest we need to press it to fund this participation. Government can hardly argue that getting the legal framework for this right will one of the key issues of the coming years, and then expect the rest of us do participate in the discussions (a) for free, and (b) with no funding to pay for our own expert advice.

- 130. Cathy O'Neill was very clear about two things. First, the need to create institutions that have a statutorily-backed role to audit algorithms in the public, private and not-for-profit sectors. The methodology for these audits must be open-sourced if it is to retain public trust. Second, the need for organisations to have a formal process for hearing stakeholders' views in relation to algorithms under consideration.
- 131. In the Algorithm Assessment Report published by Statistics NZ in October2018, no mention is made of an algorithm audit institution being created.Instead it states:

This review has found that all participating agencies have some form of assurance process around their development and/or procurement of algorithms. However, subsequent, ongoing monitoring and review of algorithm use was not reported as strongly by agencies.

Half of the participating agencies said they would consider establishing or expanding governance groups to oversee future development and use of models, but few have done so already. Such groups tend to oversee performance and update of models to ensure the models meet ethical and privacy standards, continue to achieve expected performance, and adapt to changing circumstances.

Although there are positive steps being taken to ensure robust development of algorithms there is opportunity to strengthen the focus on ongoing monitoring and assurance to ensure algorithms are achieving their intended aims or have not had adverse effects.
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132. In relation to Dr O'Neill's second point, the *Algorithm Assessment Report* notes in relation to hearing stakeholder views:

This review has also found that there is no consistent approach to capturing and considering the views of key stakeholders during the algorithm development process. While it is not going to be practical or expedient to directly consult with all stakeholders on the development of every algorithm, it is important to ensure that the perspectives of those who are impacted by algorithmic decision-making have been considered, particularly when new algorithms are part of a new service or a substantial change in delivery approach.

Therefore, it is recommended that agencies formalise and document stakeholder perspectives as they would when developing a significant policy or legislative change. Particular consideration should also be given to embedding a te ao Māori perspective through a Treaty-based partnership approach. This includes reflecting the taonga status of data that relates to Māori.

133. The *Report* notes at the end that:

While this is an important first step in mapping and describing the way that the Government is using algorithms, the review has been necessarily limited in terms of scope. Subsequent phases could include:

- reviewing the algorithm use by wider government, potentially including crown entities and other government funded organisations
- assessing algorithms used in other aspects of decision-making in more detail, such as policy development and research
- undertaking a more detailed review of current algorithms.

Expanding this assessment into a second phase with a greater scope will require additional resources to ensure that the work can be

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completed in a timely fashion, utilising appropriate skills and expertise. Weighing the potential benefits and costs of a further assessment phase will be a future decision for the Government.

- 134. While further background material to the *Algorithm Assessment Report* can be found on the data.govt.nz website, there did not seem to be anything indicating whether a paper has yet been put to Ministers on whether to go ahead with any *'subsequent phases'*.<sup>8</sup> It is also notable that no mention is made of exploring the possibility of creating an independent algorithm auditor. NZCCL may want to explore internal consideration of this, and any advice to Ministers, via OIA requests.
- 135. A sceptic might suggest that while the invitation of expert speakers such as O'Neill, Dewar, Maclaurin and Gavaghan enabled some of the key issues to be raised at the Data Summit, there is little or no intention amongst officials or Ministers of pursuing the more uncomfortable options that would shift power over the gathering, use and sharing of data, and that the event was merely part of continued window-dressing to try and justify the existence of 'social license' for agencies to increasingly aggregate, share and re-use New Zealander's personal data. It is clear that it will take concerted political pressure to force the more transformative actions discussed at the Summit on to the agenda of the government and agencies, and that it is important to do this in the near future as we are on the cusp of (if not already deep into) a significant shift in data use and algorithmic decision making affecting us all.
- 136. The question formulated by Statistics NZ to frame the discussion at the Data Summit was 'We can, but should we?' While this is useful in potentially inviting debate about competing values (a normative discussion), in some ways we would also benefit from asking a much more practical and pointed question, 'Why will government agency 'X' do 'Y' practice of data linking/sharing?'

<sup>&</sup>lt;sup>8</sup> *Related algorithm work*, Accessed from: <u>https://data.govt.nz/use-data/analyse-data/government-algorithm-tranparency/related-algorithm-work/</u>

Andrew Ecclestone

- 137. Finally, it seemed to me that one of the unspoken premises at the Data Summit was that participants were engaged in a process of finding a balance between privacy and innovation. This is as misguided, in my opinion, as the notion of balance between privacy and security. In the case of 'innovative' use of statistical data about people by government agencies, we are currently relying on agencies' good faith for their claims for a 'public good' purpose to use data that was originally collected for more limited and narrowly defined purposes. If they are not being made in good faith, or are for a questionable 'public good', serious difficulties arise. Is it a 'public good' if the benefits of the broad re-use of data will only be felt by a narrow segment of the population? Or if they are only felt by a narrow group, is it because there is a public good in assisting this group to overcome a difficulty, rather than targeting them for some punishment? Further reflection on this can be found in a blog post by a former economist at the Reserve Bank of NZ, Michael Reddell.<sup>9</sup>
- 138. My thanks to the Committee of NZCCL for enabling me to attend the Data Summit and participate in the discussions.

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<sup>&</sup>lt;sup>9</sup> *The IDI and government data linking*, Croaking Cassandra, 9 October 2018. Accessed from: <u>https://croakingcassandra.com/2018/10/09/the-idi-and-government-data-linking/</u>

# Appendix 1 – Links

Dr Cathy O'Neill: <u>https://mathbabe.org</u> (Personal site, blog); <u>http://www.oneilrisk.com</u> (Risk consulting and algorithm auditing); <u>https://www.bloomberg.com/opinion/authors/ATFPV0aLyJM/catherine-h-oneil</u> (Columns for Bloomberg); @mathbabedotorg on Twitter

First Nations Information Governance Centre: https://fnigc.ca; @fnigc on Twitter

Dr Jonathan Dewar: @jonathanrdewar on Twitter

Te Mana Raraunga: www.temanararaunga.maori.nz and @MaoriDSov on Twitter

**Professor Tahu Kukutai:** <u>https://www.waikato.ac.nz/staff-profiles/people/tahuk</u> (Faculty page); <u>https://www.waikato.ac.nz/nidea/people/tahuk</u> (National Institute of Demographic and Economic Analysis); @thkukutai on Twitter

Associate Professor Amy Fletcher: <u>https://www.canterbury.ac.nz/arts/contact-us/people/amy-fletcher.html</u> (Faculty page); @AmySciTech on Twitter

Centre for Artificial Intelligence and Public Policy at University of Otago: https://www.otago.ac.nz/caipp/index.html

New Zealand Law Foundation Centre for Law and Emerging Technologies: https://www.otago.ac.nz/law/research/emergingtechnologies/index.html

**Professor James Maclaurin:** <u>https://www.otago.ac.nz/philosophy/dept/staff-</u> maclaurin.html (Faculty page); @jamesmaclaurin on Twitter

# Associate Professor Colin Gavaghan:

<u>https://www.otago.ac.nz/law/staff/colin\_gavaghan.html</u> (Faculty page); @colingavaghan on Twitter

Liz MacPherson: <u>https://www.stats.govt.nz/about-us/executive-leadership-team/</u> (Bio page at Statistics NZ); <u>https://www.data.govt.nz/about/government-chief-data-</u> <u>steward-gcds/</u> (About page at data.govt.nz); @GovStatistician on Twitter

Statistics New Zealand blogpost about the Data Summit: https://www.data.govt.nz/blog/data-summit18-its-a-wrap/

# Appendix 2 – Speaker's Slides

# Hon James Shaw

Video on YouTube: <a href="https://youtu.be/lf0FKXuazDw">https://youtu.be/lf0FKXuazDw</a>

# Liz MacPherson

Video on YouTube: https://youtu.be/CA46nkpvtrk

# Dr Cathy O'Neill

Slides on Prezi: https://prezi.com/bjz\_ds-fav9x/wmds-solutions/

Dr Jonathan Dewar (FNIGC)

Slides [PDF]: <u>https://www.data.govt.nz/assets/Uploads/Presentation-Jonathan-Dewar.pdf</u>

# Professor Tahu Kukutai

Slides [PDF]: <u>https://www.data.govt.nz/assets/Uploads/Presentation-Tahu-Kukutai.pdf</u>

# **Dr Amy Fletcher**

Slides [PDF]: <u>https://www.data.govt.nz/assets/Uploads/Presentation-Amy-</u> Fletcher2.pdf

Professor James Maclaurin and Associate Professor Colin Gavaghan

Slides [PDF]: <u>https://www.data.govt.nz/assets/Uploads/Presentation-Colin-Gavaghan-and-James-Maclaurin.pdf</u>

(Copies of the slides are incorporated into the PDF of this report)

 $J_{a,\sigma^2}(\xi_1) = \underline{(\xi_1)}$ a) дa  $\int_{a,\sigma^2} (\xi_1) =$ д T(x)<u> </u>*∂6*  $\int T(\mathbf{x}) \left( \frac{\partial}{\partial \theta} \ln L(\mathbf{x}, \theta) \right) \cdot f(\mathbf{x}, \theta) d\mathbf{x} = \int_{\mathbf{R}_a}^{\partial} f(\mathbf{x}, \theta) d\mathbf{x}$ 0 T(1)/(1.0)







# WIDESPREAD Mysterious Destructive

Pek





















#### **Criminal History**

- Any prior adult convictions: Yes
  A, Three or more present offenses: Yes
  Ever incarcerated upon conviction: Yes
  Ever punished for institutional misconduct: Yes

### Education/Employment

- 11. Currently unemployed: Yes 13. Never employed for a full year: Yes 14. Ever fired: Yes 17. Suspended or expelled at least once; Yes

#### Financial

22. Reliance upon social assistance: Yes

#### Family/Marital

24. Non-rewarding, parental: A relatively unsatisfactory situation with a need for improvement 26. Criminal-Family/Spouse: Yes



#### Accommodation

- 27. Unsatisfactory: A relatively unsatisfactory situation with a need for improvement 28.3 or more address changes last year. Yes 29. High crime neighborhood: Yes

#### Leisure/Recreation:

31. Could make better use of time: A relatively unsatisfactory situation with a need for improvement

### Companions

- 32. A social isolate: Yes 33. Some criminal acquaintances: Yes 35. Absence of anti-criminal acquaintances: Yes

### Alcohol/Drug Problem

- 37. Alcohol problem, ever: Yes 38. Drug problem, ever: Yes 41. Law violations: Yes 42. Marital/Family: Yes 44. Medical: Yes

### Emotional/Personal

- 46. Moderate interference: Yes 47. Severe interference, active psychosis: Yes 49. Mental health treatment, present: Yes

#### Attitudes/Orientation

51. Supportive of crime: A relatively unsatisfactory situation with a need for improvement 54. Poor, toward supervision: Yes













	Profit	Fairness	False +'s	False -'s	Data quality
Company					
Customers	_		·		-
Black Customers					
White Customers				-	
				1	
				_	Company







# **Dr Jonathan Dewar's slides**



### **First Nations Information Governance Centre**

September 27, 2018 Data Summit '18 Jonathan Dewar – Executive Director





- Rooted in the mid-1990s work to develop  $\mathsf{OCAP} \ensuremath{\mathbb{R}}$  and the Regional Health Survey
- A First Nations non-profit, incorporated in August 2010 following a mandate from the Assembly of First Nations Chiefs in Assembly (#48–2009)
- Guided by principles, research ethics, and a cultural framework developed by First Nations for First Nations
- Nations come together through Regional processes; Regions come together to do region-by-region nationallevel work



### The First Nations Information Governance Centre (FNIGC)

- VISION: FNIGC envisions that every First Nation will achieve data sovereignty in alignment with its distinct worldview.
- MISSION: We assert First Nations' data sovereignty and support the development of information governance and management systems at the community level through regional and national partnerships. We adhere to free, prior, and informed consent, respect nation-to-nation relationships, and recognize the distinct customs of nations.





➢New Core Strategic Objectives:

- >Our approach is Community-driven and Nation-based
- Our data are inclusive, meaningful, and relevant to First Nations
- >Our tools are effective, adaptable, and accessible
- Our partnerships connect regions to strengthen data sovereignty



- · Ownership, Control, Access and Possession
- Collection, protection, use, and sharing of First Nations data
- · Benefits community while minimizing harm
- Self-determination and preservation and development of culture





### **Regional Health Survey (RHS)**

- Piloted in 1997
- Designed to collect information on health, well-being, and social determinants of health
- Phase 1 (2002/03) and 2 (2008/10) are available in the Data Centre
- Phase 3 (2018) data is now available
- RHS is considered *the* reliable source of info about life in 630+ communities across Canada
- RHS4: 2018-2023



### FN Regional Early Childhood, Education, and Employment Survey (FNREEES)

- Launched in 2013 to address a long-standing data gap
- FNREEES was a unique initiative, marking the first time this breadth of information had ever been collected
- 20,429 First Nations children, youth, and adults in 243 communities
- 2016 Report showed strong associations between the importance of language, culture, and family and educational, employment, and health & wellbeing outcomes



### FN Labour and Employment Development Survey (FNLED)

- Launching in 2018-19, FNLED will gather labour market information about employment, labour, jobs, skills, and development in FN communities across Canada
- An important extension of work done by FNIGC and its Regional partners, building on RHS and, specifically, FNREEES
- 19,000+ First Nations youth and adults in 230 communities
- Final Report expected in 2021



# **First Nations Community Survey**

The First Nations Community Survey seeks to collect information, at a community level, across 12 thematic areas.

- External environment
- Shelter and infrastructure
- Housing
- Food and nutrition
- Employment & Economic Development
- Early Childhood Development
- Education
- Justice and Safety
- Health Services
- Social Services
- First Nations Identity
- First Nations
  Governance









- ≻Special Purpose Custom Tabulations
- ≻General Purpose Custom Tabulations
- ➤Collaborative Research Services
- ≻On-site data access



### **First Nations Data Centre**

- De-identified, record-level data accessible in person at the FNDC located in Ottawa.
- Access through our Regional Centres may be forthcoming
- Mandatory data access contract and confidentiality agreement
- Can access only variables and data subset required for analyses
- Policies and procedures similar to those at Statistics Canada



- Signed Agreements
- 🖌 Orientation
- ocap®
- Workstation and File Security



# Regional or Community-level Data

- Community-level data are available with consent of the community
- Regional-level data are available with consent of the region



+ + 0 0

## **On-line Data Request**

• On-line application (<u>http://data.fnigc.ca/fndc</u> )

If you and younged to date formation Field Mathema Date Control or responder auto the MOC, Responder the State against to Proceedings Control for against to Proceedings Control for against to Proceedings Control for against to Proceedings Control for Against State Proceedings Control for Agains	d the Popt Nations internation conversion of the Namesch Strendster, you must complete to your heights? Tak them completed and ball as and the signing of an approximation? In the te	perior, eventine para ani teneros de propulsarian latens el ar- an application form. To 10 anit al application form, para reus method. Nat. 4 Sect. Considerativa el contraj i an central reuses apreciations for dels accento.	Check Register Theory Register Theory
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### Application form will ask....

- ✓ Research purpose
- ✓ Analysis method
- ✓ Survey and variables needed
- $\checkmark$  Who will have access to the tables or data
- ✓ Benefits and risks
- ✓ Whether project has support of First Nations communities or organizations
- ✓ Expected outputs
- ✓ Dissemination of findings

# For more information

www.fnigc.ca/fndc





## The First Nations Information Governance Centre (FNIGC)

Budget 2018:

- \$2.5 million to FNIGC to design a National Data Governance Strategy; and
- Coordinate the establishment of Regional Information Governance Centres



# Thank You!

www.fnigc.ca

Jonathan Dewar, PhD Executive Director jdewar@fnigc.ca

# Professor Tahu Kukutai's slides



Data Summit '18 Informed decision-making through the ethical use of data



'Whalerider'. Preston Singletary & Lewis Tamihana-Gardir Prof. Tahu Kukutai

University of Waikato Te Mana Raraunga



Whose ethics

WHOSE DATA

# **Whose decisions**



Indigenous Data Sovereignty



Data Sovereignty states that data is subject to the laws of the nation within which it is stored

Indigenous Data Sovereignty states that data is subject to the laws of the nation from which it is collected (including Tribal nations)

• Māori Data Sovereignty refers to the inherent rights and interests that Māori have in relation to the collection, ownership, and application of Māori data.





Advocating for the development of capacity and capability across the Māori data ecosystem including:

- Data rights and interests
- Data governance
- Data storage and security - Data access and control



What are Māori Data?



Māori data refers to information or knowledge in a digital or digitisable form that is about or from Māori peoples and our environments, regardless of who controls it.

Data from Māori (self-generated) · Eg. Māori/iwi organisations and businesses

Data about Māori (generated by others) • Eg. IDI

Data about Māori resources (self and/or others) • Eg. Māori land

lāori	Data	



Sovereignty

Ν

is a key mechanism for enabling **self-determination and innovation** 

- is concerned with protecting lwi/Māori rights of access to data participation in data integration activities partnership in the governance and/or ownership of data (Te Tiriti is foundational)

recognises that Māori data should be subject to Māori governance 1. Data for Governance Access and Use to transform the lives of Māori

2. Governance of Data Governance and Control to ensure the data is relevant and responsive



Control serves rights



Rangatiratanga | Authority



 Control. Māori have an inherent right to exercise control over Māori data and Māori data ecosystems. This includes but is not limited to data creation, development, stewardship, analysis, dissemination and infrastructure.

 Jurisdiction. Decisions about the physical and virtual storage of Māori data should enhance control for current and future generations. Whenever possible, Māori data should be stored in Aotearoa NZ

• Self-determination. Māori have the right to data that is relevant and empowers sustainable self-determination and effective self-governance.



Kaitiakitanga |



- Stewardship. Maori data needs to be stored and transferred in such a way that it enables and reinforces the capacity of Māori to exercise kaitiakitanga over Māori data.
- *Restrictions*. Māori should decide which Māori data sets should be controlled (tapu) or open (noa) access.

 Ethics. Tikanga, kawa (protocols) and mātauranga Māori (knowledge) should underpin the protection, access and use of Māori data.

### Data from a Māori worldview:

Manaakitanga | Reciprocity



 Respect. The collection, use and interpretation of data should uphold the intrinsic dignity of Māori individual, groups and communities.

 Consent. Free, prior and informed consent should underpin the collection and use of all data from or about Maori. Less defined types of consent must be balanced by stronger governance arrangements.







### Data Summit'18

Prof. Tahu Kukutai National Institute of Demographic and Economic Analysis Te Mana Raraunga



Amy Fletcher, PhD The University of Canterbury amy.fletcher@canterbury.ac.nz Twitter: @AmySciTech

Artificial Intelligence, Automation and Employment in the United States: Towards Augmented Democracy?

# Jon Katz, Wired Magazine

• The Digital Nation points the way to a more rational, less dogmatic approach to politics. The world's information is being liberated, and so, as a consequence, are we.

# R. U. Sirius (aka Ken Goffman)

• As more and more people get a voice, a voice needs a special stridency to be heard above the din. On the street, people tolerate diversity because they have to—you'll get from here to there if you don't get in anybody's face. But the new media environment is always urging you to mock up an instant opinion about The Other ... You can be part of the biggest mob in history. Atavistic fun, guys. Pile on!

# The Question

• How can individuals, organizations, communities, and societies survive and thrive in an era of exponential technological change?



















The Future of Work















It's Not the 'Future of Work,' It's the Future of Workers That's in Doubt ----





THE DRIVERS:





SENSE MAKING ABILITY TO DETERMINE THE DEEPER MEANING OR SIGNIFICANCE OF WHAT IS BEING EXPRESSED

THE DRIVERS:

th.

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ROFICIENCY AT THINKING AND COMING UP WITH SOLUTIONS AND RESPONSES BEHOND THAT WHICH IS ROTE OR RULE-BASED RESPONSES ROTE OR RI THE DRIVERS:





5



# **Key Questions**

- How can workers be supported to adapt to new technologies and new industries?
- Will workplace protections survive?
- Do we need to consider Universal Basic Income or other mechanisms as a safety net for periods of job disruption?
- How can society support those upon whom the risks of technology transformation fall most heavily?



# Augmented Democracy

- Fair
- Transparent
- Accountable

# A Blueprint for Augmented Democracy

- Develop technological citizenship
- Increase diversity within the technological sector
- We are not all starting from the same place
- Adapt education to the new world of work
- Remember **why** democracy matters and remember to 'make the case' consistently

# Associate Professor Colin Gavaghan and Professor James Maclaurin's slides

#### Al technologies | Maximising benefits, minimising potential harm

Associate Professor Colin Gavaghan Professor James Maclaurin University of Otago

Centre for AI and Public Policy Centre for Law and Emerging Technologies





Law Foundation

#### Al technologies | Maximising benefits, minimising potential harm

#### In this talk ...

- The relationship between AI and Data Science
- CAIPP as an in interdisciplinary centre
- Mapping the domain of the social, ethical and legal effects of Al
- Cases and strategies for maximising benefit and minimising harm

#### Al, Data and Data Science

- There are not simple agreed-upon definitions of either data science or AI.
- Al is changing data.
- Data was...
- given for a purpose
- static
- able to be corrected or deleted

#### Data now...

- Data is given but it is also extracted
- Data is inferred
- I know less about what data others hold about me, what it's for, how it was constructed...

#### I have less control as a data subject

- Tyranny of the minority
- My data is 'exchanged' for essential services by effective monopolies
- It's hard to ask a company to correct or delete data if I don't know it exists or I don't understand what it means
- Data is a form of wealth that is very unevenly distributed

#### So for the individual

- Data has become much more dynamic, much more empowering, very efficiently harvested
- And I have less knowledge about it and less control over it than people used to

- AI is changing business and government
- It is providing insights, new types of products and services.
- It is allowing us to assess intentions, risks... more accurately and on the fly.
- It is allowing us to target resources in ways we couldn't before.
- But...
- The information ecology can be as uncertain for governments and businesses as it is for individuals.
- inaccuracy, bias, lack of transparency are problems for organisations just as for individuals, but organisations have different levels of motivation to solve those problems.

### IA is democratising data for both individuals and organisations

- I don't have to be a statistician to use statistics for very complex tasks
- But at the same time I might not know very much about how or how well those tools are making those decisions.



Now including computer and information science, law, philosophy, economics, education, zoology, statistics, linguistics, management, marketing, politics, psychology, sociology, social work... The domain of social, ethical, legal research into AI



The domain of social, ethical, legal research into AI

			0		
Collection, consent, use of data	Fairness / accuracy	Effects on employment, professions		Economic & social	
Effects on politics,		Effects on pr the econ	roductivity, iomy	polarisation	
democracy, free speech	Human Rights		Brivaov	Equity of access	
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		Effects on employment, professions	Economic & social
Effects on politics, democracy,	Data Sovereignty	Effects on productivity, the economy	inequality, polarisation
free speech	Human Rights	Privacy, Explainability surveillance	Equity of access
Inclusion	Regulation, liability, institutions	Governance	Effects on:
	Trust	Recreation, family life,	Health, Education training, Justice policing crime, defence security
	Effects on Māori	Effects on wellbeing	isiness, novation



Algorith	im-centric research	The domain of soc	ial, ethical, legal rese	arch into Al
Fairness / accuracy		Collection, consent, use of data	Effects on employment, professions	Economic & social
		Data Sovereig Effects on politics, democracy, Human Righ free speech	nty Effects on productivity, the economy ts	inequality, polarisation Equity of access
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### Artificial Intelligence and Law in New Zealand

### The domain affected by GDPR

Effects on employment,

Collection, consent,

Fairness / accuracy

Fairness / accuracy		Effects on employment, professions	Economic & social	
		Effects on productivity, the economy	polarisation	
		Explainability		
	Regulation, liability, institutions	d	Bias, iscrimination	
Control, human factor	rs		Justice policing crime,	
			The Law Foundation	lia

use of data	,	p		Economic & social	
	Data Sovereignty			inequality,	
		Effects on pr	roductivity,	polarisation	
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democracy,	Human Rights			Equity of	
free speech				access	
		Privacy,			
Autonomy		Explainability	surveillance		
Inclusion	Regulation,	Governance	dis	Bias, scrimination	
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				Effects on:	
				Health, Education training,	
Control,	Trust	st Recreation,		Justice policing crime,	
human factors		family life,		defence security	
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ability / responsibility	Effects on Māori	Effects wellbei	on ng	ovation	

The domain affected by GDPR Collection, consent, use of data



Al technologies | Maximising benefits, minimising potential harm

So we know the question we want to answer— How do we use data in a way that is fair, for public benefit, and trusted.

# **Regulation and AI**



# Do we need 'AI law'?

'the policy discussion should start by considering whether the existing regulations already adequately address the risk, or whether they need to be adapted to the addition of AI.' (US National Science and Technology Council)

### Not all problems are (entirely) new problems



### Driverless car makers could face jail if AI causes harm

Al technologies which harm workers could lead to their creators being prosecuted, according to the British government.

16:33, UK Tuesday 25 September 2018

Responding to a written parliamentary question, government spokesperson Baroness Buscombe confirmed that existing health and safety law "applies to artificial intelligence and machine learning software".

> "I'm sceptical both that industry's own tests will be deep and comprehensive enough to catch important issues, and that the regulator is expert enough to meaningfully scrutinise them for rigour," said Michael Veale, researcher in responsible public sector machine learning at University College London.

# **Right to reasons**

### **Official Information Act 1982**

Section 23 (1): where a department or Minister of the Crown makes a decision or recommendation in respect of any person in his or its personal capacity, that person has the right to be given a written statement of ... (c) the reasons for the decision or recommendation.

# Elements of reasons

- System functionality ex ante
- Specific decision ex post
- Experts in how the software works
- Experts in the sort of decision being made (criminologists, social scientists, etc)
- Non-experts!

# **Explanation not bafflegab**

'The resulting systems can be explained mathematically, however the inputs for such systems are abstracted from the raw data to an extent where the numbers are practically meaningless to any outside observer.'

Dr Janet Bastiman, evidence to UK Parliament Science and Technology Ctte (2017)



The use of data and analytics must have clear benefits for New Zaalanders. Data and data analytics are tools that support decision-making and 1's essential that in collecting and using public data, government agenci consider, and can demonstrate, positive public benefits. This includes:

- considering the views of all relevant stakeholders
- stakeholders ensuring all associated policies and decisions have been evaluated for fairness and potential bias and have a solid grounding in law e mbedding at a so Mach porspective through a Treaty-based partnership approach.

# Accuracy and validation

The *Daubert* test (q.v. *Calder* in NZ)

- Relevant and reliable?
- Scientifically valid and applicable to the facts in issue?
- Known and potential error rate?
- Published and peer-reviewed?

# Not all errors are equal



- 'Black defendants who did not reoffend... were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45 percent vs. 23 percent)'.
- 'white defendants who reoffended... were mistakenly labeled low risk almost twice as often as black reoffenders (48 percent vs. 28 percent)'.

# Beware of quick and easy fixes



- The Politician's Syllogism
- We must do something
- 'This' is something
- Therefore we must do 'this'

### Keeping a human in the mix

'When it comes to decisions that impact on people's lives – judicial decisions etc- then a human should be accountable and in control of those.'

Noel Sharkey, Moral Maze, 18 Nov 2017

## Belt and braces, or false reassurance?



- Supervisor vs driver reaction time
- Inert but alert?
- Decisional atrophy

"Automation bias" or "algorithmic aversion"

'It remains to be seen, however, how an algorithm might influence custody officer decision-making practices in future. Might some (consciously or otherwise) prefer to abdicate responsibility for what are risky decisions to the algorithm, resulting in deskilling and 'judgmental atrophy'? Others might resist the intervention of an artificial tool. Only future research will determine this.'

 Oswald, Grace, Urwin and Barnes. 'Algorithmic risk assessment policing models' Information & Communications Technology Law (2018)

Real empowerment, or passing the buck?

- Individual data subjects are not empowered to make use of the kind of algorithmic explanations they are likely to be offered
- Individuals mostly too time-poor, resource-poor, and lacking in the necessary expertise to meaningfully make use of these rights
- Individual rights approach not well suited when algorithms create societal harms, such as discrimination against racial or minority groups.
- Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a 'right to an explanation' is probably not the remedy you are looking for.'

# Impossible standards, or settling for too little?




## Appendix 3 – Photos of Notes from Day Two 'Unconference' Discussions

NB - photos are not arranged in time or discussion 'pod' order

Profit fairness FP FN Data company Customers black ppl White ppl Ourstians to ask tursheld? W?M?D? - Who are your stakeholders? Sponsar? Slights - What groups do you need to consider in your analysis? Look it human rights act. - What does succes + failure book like for each ? - What does succes + failure book like for each ? - What does succes + failure book like for each ? - Who is it is ported for ? - we we take regetures, false position, dote gradity. - include the 'do nothing' option? - who has the tiral say > insults and - How can we make the results queilable?

discussions Co-design statistics with Maari Who \* Right from the beginning + right through the process - Butting yalurs on "excess" ti 9 \* Frame works currently exist: tor Ngati Porou [12 years looking a well being] SNZ - accessing data that exists But at o \* Fit for purpose "Accountability of settlements \* Who are the stakeholders; What is the story to be told? Restricted × How a involv Voice \* Start the conversation [SNZ] are u eg, Future - many groups may be Ethical h sarting conversations so join up? we have \* How do we give value back -how to \* Definitions of wealth may be quite different to a financial sector data. \* On-going Support for financial decision, 1. e Mapti Para support into housing of solo mums. (solo familie)

\*IN WHICH DIRECTION DOES POWER FLOW? Regulation of private industry to mitigate harmful outcomes -Trial algorithmic andit in public sector ... then expand to private sector? The holders of data have the powergive communities data the risks of "new" dotter -- "with great power comes who is empowered?" great responsibility " Who is at risk? > and the ability to make decisions with it Open sourcing - to some extent - ability to have external audit Replicability - do we apply the same of research standards with data? - what does peer review of data/algorithmy look like?





e believe that Mapri should not be charged cost recovery for data request by SNZ - That there should be a strategy for capacity building of Maovi to understand - data + have data expertise - the de kupenga survey needs to evolve to be more helpful to Maovi communities - there should be a Maori Goverance group for data that sits at the same level as - that data should be collected to show Maari values pogress, opportunities issues.

How much kata is too much to collect? \* Needs more national discussion > nod need public buy in X Consent and privacy questions \* What will it be used for \* What is ethical. \* Who is getting the value ? \* How much is too little? Risk?? \* need to explain why we need it \* Ethics of data searly education \* issues of trust





We the poliboliove.. NZ needs a stock take of data and Capabilits between levels of govern--ment.

public, ok to share r link Tim Berner's Lee - dois ( soon via national WBC library ) Linked Data principles. - orcid -national braness number) Linked data stats data strategy should address best prochées re URIS the capability building and leadership. -hansard as xml 1RD # National health index private in student # tread carefully privers licence

Data Inequality Provecty 3 Data Paverty - Gnoups not in data - Capability to use the data (1) - fit For purpose data (vetrofit Te kupenga Por eg.) ter ( information needs not ) been met Access to results Unions for data subjects? Have purpose for data 3 Inequality = Values blic, ok to share r link Tim Berner's Lee doi5

We, the pod, be lieve ... the IDI should be more transparent. The 1D1 Allows Policymakers to do things they could it otherwise for good or ill. The IDI is more tight conholled than other native forms of data ggregetion. The power of control should be reviewed. Whether the IDI Should even exist 16 questionnable.

- National U 200 1-10AN U WE THE POD BELIEVE : WE LANT CAN DON'T WEED IDONT INY WHAT CAN WE NUMAN Sheet opener Metadara Deco to collect Do ALAT 1 LE Partisin's 646us 4 6mort WHAT CAN HE DO 10mmFil Susante NEITHER OF? P.C. Que 3 ETHICS Or FOR DATA 33 eserte. 4.5 3 WE = NZ INC. -> 000T =STATS/GODS + DO- SECURITI 2 the 0 - PRIVAL E Do actor? OMEDENTIALITY UNDERSON NO OPEN DATA -softweer -CLARIT DYNAME . 2 TIZANSPO DENCY - PURPOSE

PODI-IDAM 2 FR DWA OF ALL \* PERSONA DOTO SOUDEELENTS = ACCESS + CONTROL TRENDS TOURDS MORE OPEN, TEDASPPRENT DISTILLETHICS HAPPENING IN MORKET - SIGN UP CHARTER MAY BE SUFFICIENT (I.E. MOLUENCE APPROACH - FULL FLOOR OF ONEIDENCE IN (FOILDINON -NS INC OWD CONTROL | INGLUENCE OJGEAS ORG. REAMICIOUS USE, BLIT THERE ARE CONKEDUIENCES FDATI IS LILLE WITHER - WIND OLNS IT? DO I OLN MY OWN DATA - NO INC NEEDS TO CLARIEY THIS - POTONTIALLY TO LEVEL of GOPL-LIKE TEONSPARANCY

We, the pal, be lieve .... How do use make a difforence with DATA () What question is Trying to be answered? Enfluencer Byin O STAKEHOLDER 3 How do ve measure all EFFects the E =- ve (4) DATR is G public good? S Analysis \$700 4 Rublic good? 6 Unallange Beliofs D Contrat matters

Finding victims of algorithms . who what is a waterin? which is about yet of parts apoun wood spirals of General awareness raising - education the and support and advice . Raise capability of support services. We should build in retification, wherever possible (2) We should provide an explanation, wherever possible. 3 Right of appeal, redress. ( Algorithus to check algorithms ? Checke

-> Recognises different types of of work - With automation, could give people options for flexible work Universal Basic Income JOOD OR BAD 8 -p 1s there an evidence base? -P should universal pension in N2 extend to other groups in society? - P How would it be finded? - Fundamental shift in tax system - buniversal basic divident in funded by big multinational companies or extraction narray - eo Alaska = everyone receive oil dividend ney M.K.A.



New jis Pennie the Pol, believe Linuts of individual & collective data rights Collective rights in data are a thing. There are times when to lective good outway's individual rights are data (But we're not agreed that the softing are perfect.) Privacy Act eg. Individual rights/goods kan conflict with collective rights boods can conflict with "The greater good." I other rights (eg contract) We as individuals don't have a good undestanding of the impact of disclosing our data 1 For ownsplues into the Pature - let along Ahere Exploring sub-populations' conceptions of ethics (generally) can inform better whys of doing things that we can all agree on. There should be a presumption that those whose data is being used the research should be there given to the opportunity to know what their data is used for it the results.

nn the can we build AI ethics Capability? - consult #1. Use tikanya - Sharing information -> Croate lightbulb moments -Be transparent about outcomes - Develop transporent models! - Everybody has to care - Build a transwork - We have to share - We should build capitality across organisations - Engage with a wider community of users. - Greate (+ operate under) overwichtig AI ethics

There should be some WHAT IS 00 PRAC IOW DO 1000 て 3 PRACTICE 600P 2 the Pod 2 119 Eo Involving starkeholders How do people disagree? - about me vois who does this effect comment? fick, off med munity · what is the problem Istatemen 9 Test actual results against this. Bir hypothesis. level How do you spread good protice? review of algorithm. ethics independ SPACE DIA for data · check historial 100 - Lo boat Ethics ma XG level principles. 0 high . Asking early questions over sight · What · Peer/ review.



Data Soveriegnty in the Context of cloud .. We believe organisations need to be very explicit about The decisions - balancing concerns - Fisks / trust issues - specifying benefits in ways consumers can understand eg. lives saved We need to tongatawhene concerns. It it's context First.

(-purhoma Decision making Dystom. "Wild west" (problem statement) How do you ensure it happens Con't rely on self regulation Not isolated - impacts X inappropriate use of data different motivators govenance brings range of vians, seeking a greemont, consistency, representation How com you be effective deflicient? How com you be effective deflicient? Ethics requires clisc uson's balancing () Agree on principles Best practice quidance Hold space for difficult discussions (getting stuck)

3 ( Jolerfon @ ? differe brun public & private storing data D'urpose & trust ? Inshat is operment's relation outside addie Seden ? Roseach, greatimal, individual, business ? What is the app - Korrent frame work not robust 3 monitoria " Torge Hing" unhedded informatin -Leu requirerhamter Purpose - vavies Whose information is it? &1-SSUrina 3 noritorna Outside private usage different USR/requirements dathe crossing bandans - not just NZ public sector Auditing GOPR - shalld you called into if you don't need Chiacy flat principle who testing Where is locus of control / ance to prove

3) Governama Maori - lack of perspective - words we use individual, rightnow - us long torm - Why other things will fall - What { Galenon ce-> out - How digital gov. nz -> Standards need to add to the too lift, build Knowledge 1 Nesponsibilitic) Stats & SIA are working on this . Social sector Lloading Francework development

We, The pol, believe trumans have a role in the application of algoritms 3 relos that shall and independent for each der D - intervience in -virent process (change decrivers) but there are risks association of huy lower now dates) to hand this meter to all in the anappliess 2 - control role - answing departur is working the She is the human decision process (Some articles) (and mondowing concorn niki)



() Singularity Could we? yes should we? 50/50 Rules .= Impossible Pessibilities (threats - ENDLESS life after - ?

moving beyond a deficit model Community Community decides defines what data/ needs how collected how do we? categorise? quant + qual nof rubberstamping a decision made by others toolkits for reframing "deficit" as Codesign system how do service Failure designers understand the communities they work with?

Se How do we ensure all stakeholder get value from data collection? 10 - incentives - evidence of previous good use - Sharo the data rapability - Regalive latalysts to reduce / stop adjustion - transparency is hard - Stress inhibits dousion making. . consent not free and informed - proximity to the use gothe data makes a eligence - allow end contributors to have some 'caneslys' of the process

setting of accounts othis at onget Works hop- consult on collection before the collection ken ? lots of use comes from seconday case of the data What about community data? - ) is a decentalised model more appropriate? - trade off between privary Reducing data coken a sharing \$ having to tell my story again and again or a service being broken when Switching locations/provides - if you involve the Statcholders in the design of class Willections you may get bette questions and higher data quality =7 but takes longer ( tst ?)

how do you be transparence without notification of atique '? - practical + theoretical limits on providing value to stakeholdes - plople may not want kng my explanations ... - what about realtime - of text security cancers -) and other downstream or there usos - Collectie conmunty 'value' - moral letrical vierpoint As a pod wethink it is complex it was to consure value for all participants - (an own Bi loast harm - Ian injoire Subjects of collection in design - con view for 'collective good ' of condering this (where points 6)






WE THE PEOPLE AT POD(6) BELIEVE THAT CONTEN WELL BEING Rosilience - body for chara and - uninterted corregiones of clarge. IN AN ECONOM Duet of goods of distribution and had this infrest Cost Productivity efficiency Infrastructure to gain access to Distribution of ONOMY wealth Fico te gob cebe rund DSX RA FULFILL lively Unpaid we House eg prid 40 laisure 105 accessio time. Ability to y Impacture technology Lites access to Cultural impact in assets healthcare the economy RtDin on inclusion of inclusion of 5 Cost (both \$ + enviormental/see of alternative "eco-friendly so to e.g. energy, pechaging, etc. 4/social) of min eraldy Car de a. x con types. dig Ot. Has do we identify the percese manters? Has do we identify the percese manters? Has can we measure the impact of charges of state? - cs. churst-m 5 G Impact of economic growth on other aspects of wellbeing. G: will the measures change as perceptions of wellbeing change? - Yes. nocleusion on perceptions of wellbeing change? - Yes. nocleusion of wellbeing. Is "copiled" the right term when talky about natural Subjecture + objecture mennes. Caldate agemance

We the people believe in Pod 6 that well being in means Realect of Peers Multiple Payser I nortan Sportmanship Duersty expression Sense of elt - Mult. lingvolism Dolonja Spirituality Honest Own Cather Finde MN NZ nusing 13 valued naway One SIC dentity Freedom + Justice 1 by atong Dedelociatic ingth Mowing what we are pi/Pas Questo on New TEAONIA ( g Practicing Con In hence of Jamly Community norms brm, g. Bring - plat Aroha mon ty Theosy to any Community Spin ERI Literacy Kluming 281 \* (U meetion to Pl bil Conn Culture Do) Ľ ollective Da

1522 2 Good data garmance WDevelop foundational priaciples limits of authority, accounter bility, and duty of care Honoring relationships C Coastrepresentation Simple clear Strecture to link everything ac Encantering resistance, allowing demenstration Pot it everywhere Stories - why are we doing this 14 istructure can free you up to achieve n A Eg internet fair use policy principles work well it can mon understanding \* 50 government standard - don't rainent NR Add Eulteral dimension If working well - impacts everything Board- set strakegic trijectory Sept - Management - tadical

named and 3 Good data garemance Strategic operationali maples to object no. 1 sotion )istinguish ? outcomes Masta Ino ecosystem hierder Lineba Stat Senard oraprisation (Justice) nale data managanes eremone is a sterr D 6 aderhance is ... Moj Structures -? ladership - management prior fies alcones/ adit accontable ler Birput - documentat NZ Lecosupter entmaing data zround Privately commission States is thinking a bart this Kevin Succher

Tood data guernamic local queminicent Smaller hold Particular sensitive data varying capabilities inconsistent practice he bus - what happens when information is ignored? Cust Context, communication, thousparcing, consent



VE THE POD BELIEVE ... RIVARY / ETHICS WHEN DESIGNING NOW THINGS Ethics by design is a good idea. Who should do it? Co-design? It is less mature than Privacy & Security There are tools that we are not using. Privacy by design is a subset at might be a good place to look for best practice. It research ethis. A Romework would be use Rul. - Don't reinvent the wheel. - Look to Health & Social Research approaches Ethics matrices might be a useful tool / approach . I deally we should retrospectively apply this. This applies to collection, storage, manipulation wation, quality, disposal, process, governance. Consider what could go wrong. But do we have the capacity? R

#### Appendix 4 – Statistics NZ write up of the Notes from Day Two 'Unconference' Discussions

Available at: <u>https://www.data.govt.nz/assets/Uploads/Unconference-write-up-</u> Nov-2019.pdf



# **Unconference write up |** "We, the pod, believe ..." Introduction

Thank you to everyone who participated in the unconference.

Information from the unconference has been reproduced using our best endeavours. So please excuse any errors or information that may have landed in the wrong place.

Not all information included a Pod number.

Some continuation pages weren't marked as such.

Not all Pod sessions produced outputs.

Some Pod sessions produced headings only.

Some information may have been omitted due to inability to read writing.

#### **Contact us**

Please email us about any content that needs to be adjusted - datalead@stats.govt.nz.



Pod schedule

Time	1	2	3	4	5	6 – Indicators	7	8
						Aotearoa NZ		
9-10am		Is data portability in NZ a feasible solution?		Deciding what to measure. Māori-centred measures.	How can we tell if market mechanisms are delivering wellbeing? No content	Introducing IANZ	How much data is too much to collect?	Making a difference with data. Building data capability.
10-11am	What can we influence? What can we control? What if we do neither?		Regulating AI. How do you make algorithms transparent? Algorithms and bias	What does co-design look like for data sovereignty? Co-design is? How do we do it? How do we bring all of society into this conversation? It's good Stats co-designs with iwi what about the rest of us?	How transparent is transparent enough? <i>John</i> How to do community engagement/social licence. <b>No content</b>	What does wellbeing mean in a 'social' context? How would we measure it?	Consent. Use of census data in the IDI – consent. What level of consent is needed when putting survey data in the IDI?	Good practice (in data management). How do we apply what we've learned in our work (ethics / transparency). What would a good governance framework look like?
11am-12pm	What is intrinsic dignity?	The limits of individual vs collective data rights.		How do we make sure all stakeholders get value from data collection?	How to ensure broad data science skills across govt No content	What does wellbeing mean in an <b>environmental</b> context and how would we measure it? Link between Stats NZ indicators and Living Stds F'work indicators.	UBI – good or bad idea? Future of work.	Easier access to data. Is a data commons possible?
1-2pm	GDPR – Roadmap or road block?			Ethical matrix		What does wellbeing mean in an <b>economic</b> context?	What will 'singularity' mean?	
2-3pm		Forbes reports 90% of execs say AI is important to the future of the company. Only 25% have adopted AI. Why?				What does wellbeing mean in a <b>cultural</b> context?		How do you build in privacy and ethics when developing new things?

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Time	9	10	11	12	13	14	15
9-10am	How much should NZers know about the IDI?	Centralised data store in govt? Ethics of IDI. What "success" or "ethics" looks like in Te Ao Māori. Social licence in the IDI.			Data stewardship / responsibility between levels of govt.	Public service algorithms. What are we doing now? Archiving algorithms – will this tell a story? Ethical algorithms vs ethical outcomes	How do we get everyone involved in thinking about the ethics of data? Data privacy and ethics. Governance and evaluation. Governance of algorithms. Whose ethics?
10-11am	Should important algorithms require a "human" in the decision process?	Should all agencies open source their code? Public (funded) discussion needed about Stats seeking consent for adding data to the IDI. Open data.	Is the Māori data sovereignty principle applied to other groups? Don't other minority groups (or all groups) deserve sovereignty over their own data?	Data disaggregation. No content	Data poverty.	Data sovereignty in the context of the cloud. Cloud and data sovereignty.	What if ethics differ? Who / how regulates? Who gets to decide? Who decides? Ethics board in practice sustainable? Leader's role? What skills are needed to set moral trajectory of AI and data use?
11am-12pm	Whose ethics? Regulating algorithms. Basic guidance for predictive analytics with admin datasets. <i>Sarah B</i> How do we define ethics? Who decides what a good algorithm looks like? How do we maximise value for the people affected?	Finding victims of algorithms.	Data →Info →KNG Or KNG →Data →Info How to promote data awareness	'Fake' data. Is R/Python promoting transparency of AI? <b>No content</b>	How to build AI ethics capability. <i>Caleb</i>	Who's scared (cautious / sceptical) or data?	<b>10-11am</b> Building capacity and capability. What makes for good/bad privacy practices and why? Building data capability.
1-2pm	Linked data. Data automation and Pacific.				How would we know what good information governance / data / algorithms – looks like?	Who do you go to co-design Māori stats / financial data. 1975 Stats leg and Māori interests?	Is using post codes in NZ akin to racial profiling? Algorithm and ethics Future of data Algorithms/data and democracy.
2-3pm				URLs – stop breaking them. No content	Is data increasing inequity? Who decides accountability? Which way is the power flowing?	Collective data rights.	

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How do we get everyone involved in thinking about ethics? -

Ethics is HARD	Context is important
Stones are good	Communities of practice
Identifying champions	Asilomar
Ethical questions	



- GDPR is very specific.
- GDPR is difficult to understand.
- GDPR is very prescriptive.



#### What is intrinsic dignity?

Pod 1 (11am)

- It exists.
- Don't impinge on an individual's intrinsic dignity? Unless there is a (good reason, collective good), to do so
  - $\circ$   $\;$  This is related to context and collective need.
- It exists and is recognised, despite it being difficult to define objectively.
- It becomes manifest where we respect individual and community rights
  - And we recognise individual and collective responsibilities.

Who is recognised as having a voice, as being counted?

Who does the counting?

What is counted – structures of how we count people impacts this, e.g. former GDP lens.

Recognise voice/contribution of individual community. Not just GDP lens.

\* Can personas help/are they cost-effective?

For example, DOB  $\rightarrow$  sensitivity is related to context and collective need.

Problems with deficit/bias/mirror flaws in information collection and reporting.

\* How we would get there would be based on Crown/Māori relationship, voice of all society, including those who are usually not heard, e.g. future generations.



#### Why isn't government adopting AI faster, given its importance?

Pod 2

- Capacity (human and capital resource).
- Social licence.
- Ethics.
- Types of problems we want to solve.
- Imagination think about situations that don't have as many ethical consierations.
- Is government the place for leading?
- Difficult to act in the public sector.
- Maintaining trust.
- Learning from biased historical data.
- Ability to audit.
- Legislation.
- Creepy factor.
- Important to get it right.
- Unintended consequences.
- Fast follower.

If it works, fully automated luxury communism.



#### Limits of individual and collective data rights (extent)

Pod 2

Collective rights in data **are** a thing.

There are times when collective good outweighs individual rights over data (but we're not agreed that the setting is perfect), e.g. Privacy Act.

Individual rights/goods can conflict with collective rights/goods, can conflict with "the public/greater good" and other rights (e.g. contract).

We as individuals don't have a good understanding of the impact of disclosing our data for ourselves into the future – let alone for others.

Exploring sub-populations' concepts of ethics (generally) can inform better ways of doing things that we can all agree on.

There should be a presumption that those whose data is being used should be given the opportunity to know what their data is used for, and the results.



#### **Regulating AI**

Pod 3

Transparency is a good idea and probably a base, but not enough because:

- Very hard to explain
- Most people probably won't engage.

So, need some form of:

**Regulator** or process to audit/assess use and provide assurance of ethical use:

Public and private, e.g. loans in US banks.

Which helps support ...

Social pressure for ethical use.

Is it possible to be transparent with AI?

- Quite hard to do!
- What is explanation for:
  - Understand impact?
  - Apportion blame?
- Reveal trade-offs in the use of AI
- Broadly toothless?
- Hard for people to understand.

*Example:* Health ethics governance body (peer reviewed) has oversight of, e.g. National Data Ombudsman 'Tuning Tick' – benefit v harm.

Using data for decision making

 $\rightarrow$  Much broader than AI

Hard to even define AI.



**Regulating AI** 

(Pod 3 continued)

Risk and opportunity because of value.

Focus on benefit to **person** (but not always one person), whose data it is.

Who decides?

Social licence = if everyone could vote, what would we say?

But are people informed enough? For example, views on cloud.

Open data paper – show how used.

Removing humans when using AI Don't have to?

Is human in loop really feasible? Depends on context.

Human bias too! Bias also in data.



Pod 3

John and I believe ...

#### VW Golf:

Define "victim"

- Individual ↑
- Group/community

#### Individual

- Lower cost? ↑
- Correct fuel economy ↑ WIN
- High emissions  $\downarrow$

#### Community

- Higher emissions  $\downarrow$ 
  - Are they higher than other makes?
  - Or just as advertised?



- Māori should not be charged cost recovery for data request by Stats NZ.
- There should be a strategy for capacity building of Māori to understand data and have data expertise.
- The Te Kupenga survey needs to evolve to be more helpful to Māori communities.
- There should be a Māori governance group for data that sits at the same level as mainstream governance.
- Data should be collected to show Māori values, progress, opportunities, issues.



#### **Ethical matrix**

Pod 4

		Profit	Fairness	FP	FN	Data quality∗	
•	– Company						
•	Customers						
•	Ethnic group 1						
•	Ethnic group 2						

#### **Questions to ask**

- Does it meet the threshold? W? M? O?
- Who are your stakeholders? Sponsors?
- What groups do you need to consider in your analysis? Look at Human Rights Act
- Whose values should be reflected in the matrix?
- What does success and failure look like for each?
  - Who is it important for?
- Measure false negatives, false positives, data quality
- Include the 'do nothing' option?
- Who has the final say?
- How can we make the results available?

\* Cathy O'Neil's ethical matrix



How do we ensure all stakeholders get value from data collection?

Pod 4

- Incentives.
- Evidence of previous good use.
- Share the data capability.
- Negative catalysts to reduce/stop collection.
- Transparency is hard.
- Stress inhibits decision making therefore consent not free and informed.
- Proximity to the use of the data makes a difference.
- Allow end contributors to have some 'ownership' of the process.

#### Moving beyond a deficit model

community decides what data/ Communit defines needs how do we? not rubberstampine a decision made others toolkity for Codesign how do service olesigners understand munities they work with



How do we ensure all stakeholders get value from data collection?

(Pod 4 continued)

- Set up accountabilities at onset
- Workshop and consult on collection before the collection
- Lots of use comes from secondary use of the data
- What about community data?
  - Is a decentralised model more appropriate?
- Trade-off between privacy/reducing data collection and sharing, and having to tell my story again, and again, or a service being broken when switching locations/providers
- If you involve the stakeholders in the design of data collections you may get better questions and higher data quality
  - But takes longer (\$\$).

#### How do you be transparent without 'notification fatigue'?

- Practical and theoretical limits on providing value to stakeholders
- People may not want lengthy explanations
- What about real time, e.g. security camera
  - And other down-stream or future uses?
- Collective community 'value'
  - Moral/ethical viewpoint.

As a pod, we think it's complex, maybe impossible to ensure value for all participants:

- Can aim for least harm
- Can involve subjects of collection in design
- Can view for 'collective good' or co-design this (where possible).



Wellbeing in a cultural context means ...

Pod 6



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Social wellbeing means all of the things below ...





Wellbeing means ...

Pod 6



#### **Questions:**

- LSF how does it fit?
- Outcome or target-based?
- Who decides final indicators?
- Community or individual measures?



Wellbeing in an ENVIRONMENTAL context means ...





Wellbeing in an ECONOMIC context means ...

Pod 6



How do we identify the perverse incentives - and mitigate/avoid?

How do we measure the impact of changes of state, e.g. churn, movement, transitions?

Impact of economic growth on other aspects of wellbeing.

Q: Will the measures change as perceptions of wellbeing change? Yes – no decision on frequency yet.

Subjective and objective measures.

Is "capital" the right term when talking about natural assets?



UBI (Universal Base Indicators) – good or bad?

- Recognises different types of work, i.e. voluntary, caring for family.
- With automation, could give people options for flexible work.
- Is there an evidence base?
- Should universal pension in NZ extend to other groups in society?
- How would it be funded?
  - Fundamental shift in tax system?
  - Universal basic dividend, i.e. funded by big multinational companies or extraction of natural resources, e.g. Alaska = everyone receives an oil dividend.



#### How much data is too much to collect?

- Needs more national discussion.
- Need public buy-in.
- Consent and privacy questions.
- What will it be used for?
- What is ethical?
- Who is getting the value?
- How much is too little?
  - o Risk??
- Need to explain WHY we need it.
- Ethics of data  $\rightarrow$  early education.
- Issues of trust.



Pod 7

We are moving to a post-privacy society – needs more safeguards and data 'rights' for citizens.

(How much data is too much to collect?)

Pod 7

Stats needs to:

- Take ownership of plain English informed consent and information c. the IDI
  - Form: exact wording 12yrs+ (age).
- Have the conversation with New Zealand public about consent to build and maintain the IDI – didn't happen under previous government. Now government has the experience of use of IDI it should provide evidence to inform this conversation.



#### Humans have a role in the applications of algorithms

#### Singularity

- Could we? Yes.
- Should we? 50/50.
- Rules impossible.
- Possibilities/threats ENDLESS.
- Life after ?



#### Privacy/ethics when designing new things

Pod 8

Ethics by design IS a good idea.

Who should do it? Co-design?

It's less mature than privacy and security by design.

There are tools that we're not using.

Privacy by design is a subset and might be a good place to look for best practice and research ethics.

A framework would be useful:

- Don't reinvent the wheel.
- Look to Health & Social Research approaches.

Ethics matrices might be a useful tool/approach.

Ideally, we should retrospectively apply this.

This applies to collection, storage, manipulation, curation, quality, disposal, process, governance ...

Consider what could go wrong.

BUT do we have the capacity?



How do we make a difference with data?

- 1. What question is trying to be answered?
- 2. Influencer buy-in.
- 3. How do we measure all effects?
- 4. Data is a public good?
- 5. Analysis is a public good?
- 6. Challenge beliefs.
- 7. Context matters.


What is good practice?

#### Pod 8

Should there be some oversight of 'good practice'?

How do we know what good practice is? What is it? Link to ...

• Do we need a high-level ethics board?

Who defines good practice?

- Involve stakeholders.
- Not a point in time ... tick off.
- How do people disagree? About me and/or my community.
- Who does this affect?
- How do you make it more transparent?
- What is the problem statement hypothesis? Test actual results against this.
- How do you spread good practice?
- Independent review of algorithm.
- Check historical data for bias.
- How do we make trade-offs?
- High level (and next level) principles.
- Asking early questions.
- What oversight?
- Peer co-design/review (throughout, not at the end).

Need to raise awareness of ethics - make process more accessible.

Guidance is needed – balancing quality and use with dignity, self-determination of the people it represents.

PHRaE (MSD) – includes Māori perspective:

- Is it the right thing to do?
- Should we be doing it?
- Is it consistent with our purpose?



#### Is data commons possible?

Pod 8

- Works on small-medium scale, e.g. predator-free NZ, Te tihi.
- Needs to be identifiable to work best.
- Trust issues at scale.
- Where to draw trade-off between liberty and data integrity.
- Trust is fragile.

Ownership

Control

Access

Possession

datacommons.org.nz.



### Governance | Decision making system

[Pod not indicated] Could relate to 8, 9, 13 or 15

"Wild west" (problem statement).

How do you ensure it happens?

Can't rely on self-regulation.

Not isolated – impacts.

Inappropriate use of data.

Different motivators.

Governance brings a range of views, seeking agreement, consistency, representation.

How can you be effective and efficient?

Agree on principles.

Ethics requires discussion and balancing.

Best practice guidance.

Hold space for difficult discussions (getting stuck).

- Difference between public and private sharing data purpose and trust.
- What is government's role for data outside the public sector?
- Research, operational, individual, business?
- What is the gap current framework not robust or monitoring?
- "Forgetting" unneeded information, e.g. requirements, purpose varies ... GDPR??

Whose information is it?

#### Assuming.

Monitoring.



### Governance | Decision making system

[Pod not indicated] Could relate to 8, 9, 13 or 15 (continued)

Outside – private usage

- Different use/requirements
- Data crossing borders not just NZ public sector
- Auditing.

GDPR – should you collect information if you don't need it?

Privacy Act principle without teeth.

Where is onus of control/onus to prove?

Māori – lack of perspective – words we use.

Individual, right now v long-term.

#### Ethics

- Why?  $\rightarrow$
- What?  $\rightarrow$  Governance  $\rightarrow$  Other things will fall out
- How?

## → 000

#### Digital.govt.nz

- Standards need to be added to the toolkit.
- Build knowledge, responsibilities.

#### Stats and SIA are working on this – social sector.

Stats  $\rightarrow$  leading framework development.



Pod 9

Three roles that should be independent from each other:

- Intervene in correct process (change decisions if they have new data). But there are risks associated with this – would need to be transparent.
- 2. Control role ensuring algorithm is working the same as he human decision making process (same outcome).
- 3. Quality and retraining (and monitoring known risks).

#### Linked data

Pod 9

#### Public ok to share and link

Doi's	Tim Berners-Lee
(soon via National Library)	W3C
Orchid National business number	Linked data principles

Stats data strategy should address best practices re URI's, and capability building and leadership

#### Private - tread carefully

IRD numberHansard as XMLNational Health IndexNational student numberDriver's licence



Whose ethics?

Pod 9

There needs to be an ethical framework – at the national level – that everyone shares at the highest level\*.

Existing frameworks:
NEHC
Principles on data [ethics]

[analysis]
Universities have ethics committees

Existing law

But able to ask ethical questions at different levels.

Ethical frameworks help us decide when we must weigh up conflicting interests:

- How to identify harms/risks and benefits.
- How to weigh them up.
- How to minimise harm and mitigate risks.
- Transparency risks and benefits.



#### Human eyes on algorithms

Pod 9

- Would need to be able to change results.
- Would need to be able to understand algorithm.
- Who decides on false + and -?
- Delegating activity to an algorithm? MSD example.
- Bad use of algorithms? Are they too simplistic?
  - o Mortgage example
  - o Limited data.
- What would a human do?
  - Change algorithm
  - Initiate another check?
- Can't exercise discretion
  - But can filter out some human biases.
- People can game algorithms.
- Someone to watch over algorithms e.g. when it keeps doing what it's trained to do
  - Understand feedback loops are treating symptoms not causes?
- Design so no one gets an adverse decision (they go to a human).
- Three types of eyes (separate) ... accountability:
  - o Intervene in current process
  - Control separate process (\$ involved or another algorithm?)
  - Quality/algorithm training risks to monitor.



#### Human eyes on algorithms

Pod 9

- Would need to be able to change results.
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  - o Intervene in current process
  - Control separate process (\$ involved or another algorithm?)
  - Quality/algorithm training risks to monitor.



### Government should open source their code data

Pod 10

If it improves social and economic wellbeing of its citizens

Saves time and rework.

Provides consistency.

Public good.

Ability to 'game' the system.

Independent ethics 'health check'.

## Finding victims of algorithms

Pod 10

Who/what is a victim?

Systematic bias?

Legal?

Disadvantaged groups' rights to explanation, redress, feedback ... downward spirals.

We, the pod, believe:

- General awareness raising education and support, advice. Raise capability of support services.
- 2. We should build in notification, wherever possible.
- 3. We should provide an explanation, wherever possible.
- 4. Right of appeal, redress.
- 5. Independent ethics review.
- 6. Transparency of purpose and efficacy.
- 7. Algorithms to check algorithms? Checks.



### Should government open source code?

Pod 10

#### Depends ...

YES, if no harm.

NO, if people can game the system.

### Should government open source data?

NO, for individual data.

MAYBE, for aggregated data.



What can we influence? What can we control? What can we do neither of?

Pod 11 (10am)

Autorna POD 1-10AN U WE THE POD WHAT CAN WE WITH WHAT CAN WE NITH BELIEVE : LANT DAT NEED 17052 COLLECT IDantes Particus CONTROL ? -64603 mile or more WHAT CAN WE DO NEITHER OF? an FOR DATA ETHICS OF S WE = NZ INC > cout MULLE Par > STATS CODS The TE SIDUMB HAT - GECURIA DRIVAL CONSIDENTIALIT AN DORSO M DATA DINA S GITIMPIAMONT

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What can we influence? What can we control? What can we do neither of?

(Pod 11 continued)

#### Personal data sovereignty = access and control (but not all data)

- Trends towards more open, transparent data/ethics happening in market
- Sign up charter may be sufficient (i.e. inclusive approach)
- Plug lack of confidence in legislation
- NZ Inc could control/influence overseas organisational pernicious use, but there are consequences.

#### Data is like water – who owns it?

Do I own my own data – NZ Inc needs to clarify this – potentially to level of GDPC-like transparency.



What is good data governance?

Pod 13

Transparency.

Fit for purpose.

Multi-level – strategic/exec (connect the layers), operational.

Broader representation.

Consideration of purpose, e.g. operational v research.

How do you know if it's effective?

More v less.

By organisational type.

Not have vested interest in outcome - need objective view

• Enough understanding for decision.

#### Develop:

- Foundational principles
- Limits of authority, accountability, and duty of care.

Honouring relationships.

Good representation.

Simple, clear structure to link everything.

Encountering resistance, allowing demonstration.

Put it everywhere.

Stories – **why** are we doing this?

The right structure can free you up to achieve, e.g. internet fair use policy.

Principles work well if common understanding.

ISO governance standard – don't reinvent.

Add cultural dimension.

If working well – impacts everything.

Board (management/tactical) – set strategic trajectory/scope.



What is good data governance?

(Pod 13 continued)

Distinguish between principles and strategic objectives – operationalisation



• Enterprise Data Governance (Stats NZ).



### What is good data governance?

(Pod 13 continued)

#### Local government

- Smaller
- Hold particular sensitive data
- Varying capabilities
- Inconsistent practice.

The bus! - What happens if information is ignored?

Cost.

Context, communication, transparency, consent.



#### How can we build AI ethics capability?

#### Pod 13

- Use tikanga.
- Sharing information create 'lightbulb' moments.
- Be transparent about outcomes.
- Develop transparent models!
- Everybody has to care.
- Build a framework.
- We have to share.
- We should build capability across organisations.
- Engage with a wider community of users.
- Create (and operate under) overarching AI ethics principles.



New Zealand needs a stocktake of data and capability between levels of government

Pod 13

[No content]

## Data inequality/poverty

Pod 13

Data poverty Groups not in data	Capability to use data
	Fit for purpose data (retrofit Te Kupenga for example) (information needs not being met)
Access to results	Unions for data subjects?
Have purpose for data	Inequality =/ Values



In which direction does power flow?

Does data exacerbate inequality?

Pod 13

Regulation of private industry to mitigate harmful outcomes.

- Trial algorithmic audit in public sector ... then expand to private sector?
- The holders of data have the power:
  - $\circ$   $\;$  Give communities data and the ability to make decisions with it
  - o "With great power comes great responsibility".

The risks of "new" data:

- Who is empowered?
- Who is at risk?
- Open sourcing:
  - o To some extent
  - Ability to have external audit.
- Replicability of research:
  - Do we apply the same standards with data?
  - What does peer review of data/algorithms look like?



We need to archive the process of government decision making when algorithms are involved ... we're just not sure how and it isn't easy!

Pod 14 (session 1)

[No content]

### Co-design statistics with Māori

Pod 14 (1-2pm)

- Right from the beginning and right through the process
- Frameworks currently exist : Ngati Porou

[12 years looking at wellbeing – putting values on "success" – building up a database: Stats NZ]

- "Accountability of settlements"
- Fit for purpose
- Who are the stakeholders? What is the story to be told? Positive contribution
- Start the conversation [Stats NZ]
  - Many groups may be starting conversations, so join up?
- How do we give value back?
- Definitions of wealth may be quite different to a financial sector data
- On-going support for financial decisions, i.e Ngati Porou support into housing of solo mums (300 families).



## Collective data rights | It's all about power

Pod 14

#### Who?

- Iwi
- Hapu
- Whanau
- A community
- A town
- A club
- An organisation
- A location
- A trust
- A board
- An association
- A trade union
- A profession
- A business
- A gang
- A school
- Universities
- A church
- A company

#### Some have special legal status, some don't

What? Transparency over use	How?
Right to be forgotten To complain	Privacy Act for collectives?
Balance with the public interest	Maintaining dignity
To consent as a collective Access and correction Use Disposal Sharing	Whare Hauora

#### Why?

- Issues affect groups as well as individuals
- Sometimes collective interests trump individual interests
- Without rights, won't get anything
- Allow for different world views
- Strength in numbers



### Data sovereignty in the context of the cloud

Pod 14

We believe organisations need to be very explicit about the decisions:

- Balancing concerns
- Risks/trust issues
- Specifying benefits in ways consumers can understand, e.g. lives saved
- Tangata whenua concerns.

We need to understand the data and its context first.



Pod 15

That leaders do have an influential role in setting the moral trajectory of data use and AI.

We see that leaders (organisational and political) do not always have good understanding of the moral issues or may lack moral skill/moral will to act in 'good' ways.

What would be good (we could do) is to educate leaders in how tech/data influences ethics – have them sign a charter (as in the UK) so they acknowledge the impact/influence their decisions have.

Leaders control resources  $\rightarrow$  perhaps allocation more towards these discussions.

What's the leader's role?

Important skills?

To set the moral trajectory embedded in data use and AI

Leader's capability?