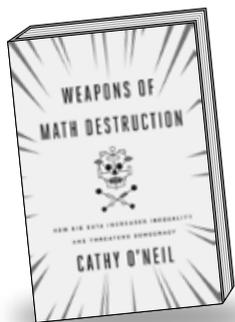


Big Data

By David Haigh, Chair, Auckland District Council of Social Services



A new book, *Weapons of Math Destruction*, written by mathematician *Cathy O'Neil*, takes issue with the increasing use of Big Data, the idea that mathematical modelling and algorithms can assist in dealing with social problems. *O'Neil* provides a number of examples demonstrating the faulty use of Big Data. In Washington DC, school children must undergo tests to assess how they are developing. If the standard test falls then it is assumed that's the fault of the teacher, and hundreds of teachers have been sacked. This led to behaviour modification of teachers who altered the student test results to ensure pupils passed and the teachers retained their jobs.

O'Neil gives an example of the complexity of daily life. She has three children and a husband who can't cook. She cooks dinner every evening. The family's tastes differ and evolve. One child hates hamburgers, but loves chicken. The other loves burgers and the daughter puts *Nutella* on everything. She tries to provide healthy food that is seasonally available and does not take too long to cook. She keeps all this information and more in her head, and even resorts to bribery to ensure vegetables are eaten. This is what is called a 'dynamic model'. But if she had to explain her system to someone else who might takeover the cooking from her, the complex model would become static, based on averages.

Another example from *O'Neil* involves the police establishing 'hot-spot' crime predictors. This shows historic patterns and predicts where and when crime might be more likely to happen. It uses geographical areas for mapping crime. The police can choose to focus on serious crime like homicide and rape, or lesser offences such as vagrancy and consuming small quantities of drugs. The more the police focus on lesser crimes, the more dots are added to the

crime map, which reinforces the need for more police and more prisons. It so happens that more of the people in those 'hot spot' neighbourhoods are Black or Hispanic. This type of feedback loop has led to a self-fulfilling prophecy, justifying the original policy.

Keith Ng from AUT also doubts the usefulness of Big Data. He asks: what if the US civil rights movement was assessed against a measure of conflict intervention? He points out that social improvements for African-Americans did not show up for very many years, and racial violence actually spiked as a result of the reforms. On the basis of 'evidence-based' models, the civil rights reforms did not make people's lives better in the short term. But it was still the right thing to do socially, morally and politically.

Ng also takes exception to the over-use of the 'evidence-based' approach. While it has been useful in medicine and epidemiology its use in public policy is limited. For example, the tobacco industry has argued that there is no evidence that plain packaging of cigarettes reduces tobacco consumption. Of course there is no evidence in New Zealand because it has not been used yet. If you do not have evidence to try something new in the social policy area then it seems we are stuck with what we have right now.

New Zealand is steadily moving in the direction of collecting Big Data in relation to vulnerable children. Treasury has produced various indicators that can be measured to identify vulnerable families and children in geographic areas of Auckland, using local board areas. It is interesting what is and is not included as indicators ...

Included:

- ✓ Having a mother with no formal qualifications.
- ✓ Being mostly supported by benefits since birth.
- ✓ Having a parent with a prison or community sentence.
- ✓ Having a mother with no formal qualifications.

Not Included:

- ✗ Having an income too low to purchase necessities in life.
- ✗ Having no home and no accommodation security.
- ✗ Living in overcrowded conditions.
- ✗ Having mental health problems.
- ✗ Having a father with no formal education.

It is clear that the issue of poverty alleviation and affordable housing are being swept under the carpet. The focus is on blaming parents. Famous sociologist, *C. Wright Mills* suggested that when we note personal troubles we should go below the surface and uncover the public issues that are the root cause. This clearly needs to be done by the Ministry of Social Development in any work to help the most vulnerable children.



It can also be argued that the social investment model is a massive social experiment. As such the Ministry of Social Development should obtain ethics approval at a national level, and individual consent would be required from all clients who are participants in this experiment.
