

# How do employees feel about the 4th industrial revolution

Professor Jarrod Haar

Ngati Maniapoto, Ngati Mahuta

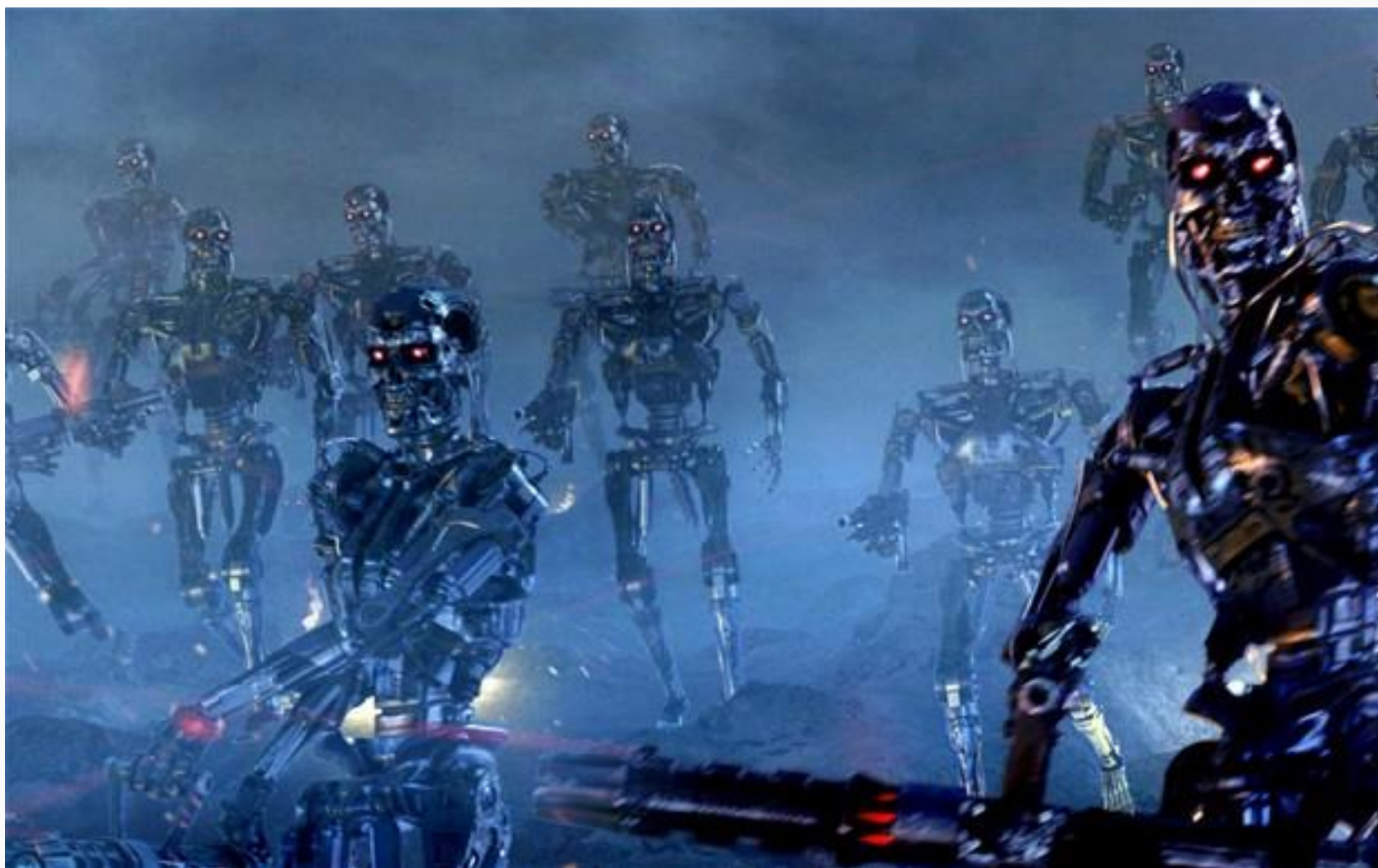
Professor of Human Resource Management

Deputy Director NZ Work Research Institute

Auckland University of Technology

Collaborator: Dr David Brougham



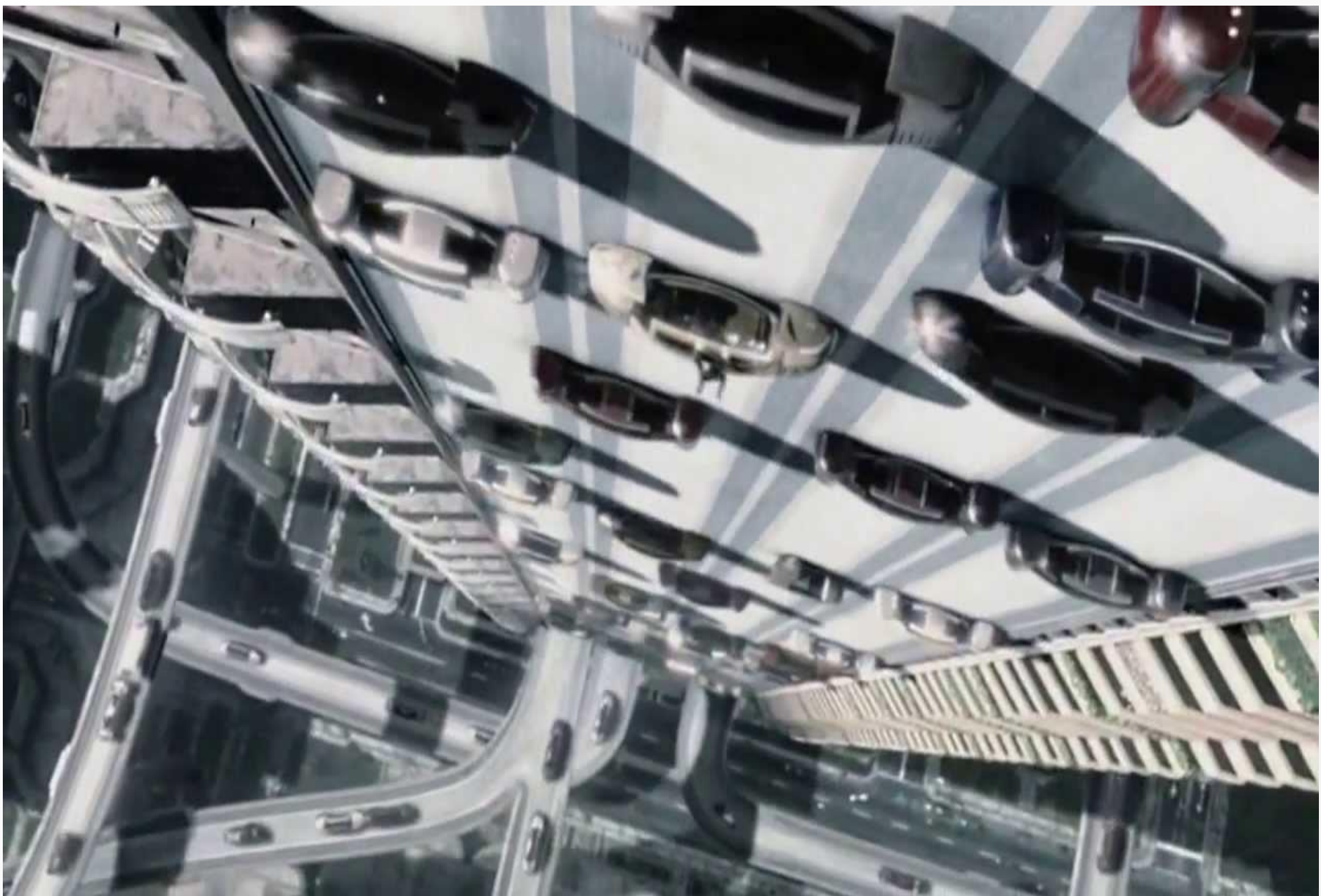


# Terminology

Smart Technology,  
Artificial Intelligence,  
Automation,  
Robotics, and  
Algorithms  
(STAARA)

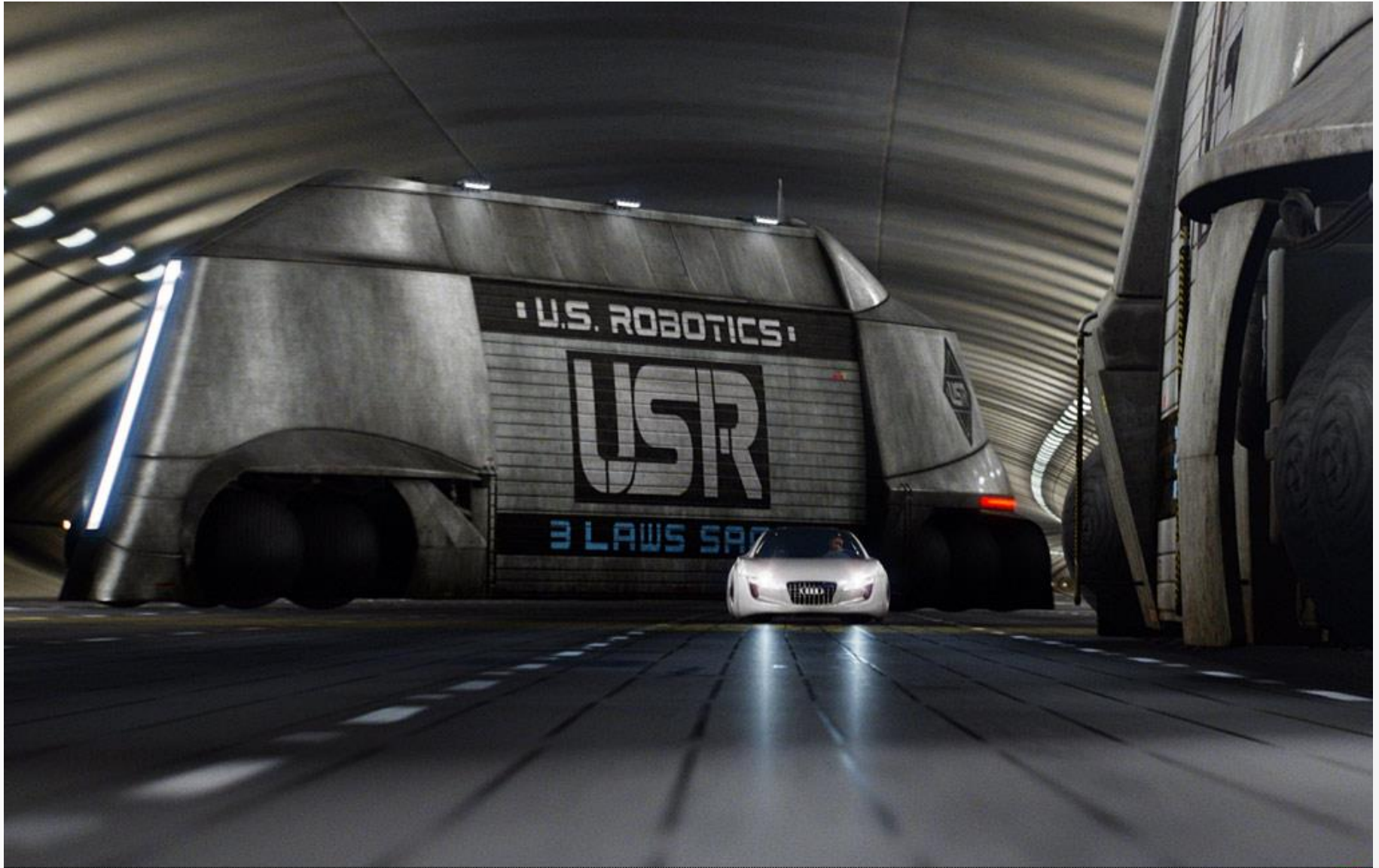
<< Driverless Cars, Trucks, and  
Things... >>





















JACK STEWART TRANSPORTATION 05.17.16 12:01 AM

# \$30K RETROFIT TURNS DUMB SEMIS INTO SELF-DRIVING ROBOTS





**Driverless Trucks Just Did Something Amazing**



<< So, driverless cars are a  
deal breaker and it's a done-  
deal, right? Right!?... >>

<< 10 million Truck driver and  
transportation jobs at risk in the  
US alone... >>

# Statistically, self-driving cars are about to kill someone. What happens next?

As autonomous vehicles rack up more and more miles on our roads, the odds of a fatal accident are shortening by the day. How will we react?

## Tesla driver killed while using autopilot was watching Harry Potter, witness says

Driver in first known fatal self-driving car crash was also driving so fast that 'he went so fast through my trailer I didn't see him', the truck driver involved said



 Investigation launched after Tesla driver killed while using autopilot



<https://www.youtube.com/watch?v=VJNPn-3WXw4>



# Islamic State threat: Isis plotting to use drones to bomb crowds at major British events

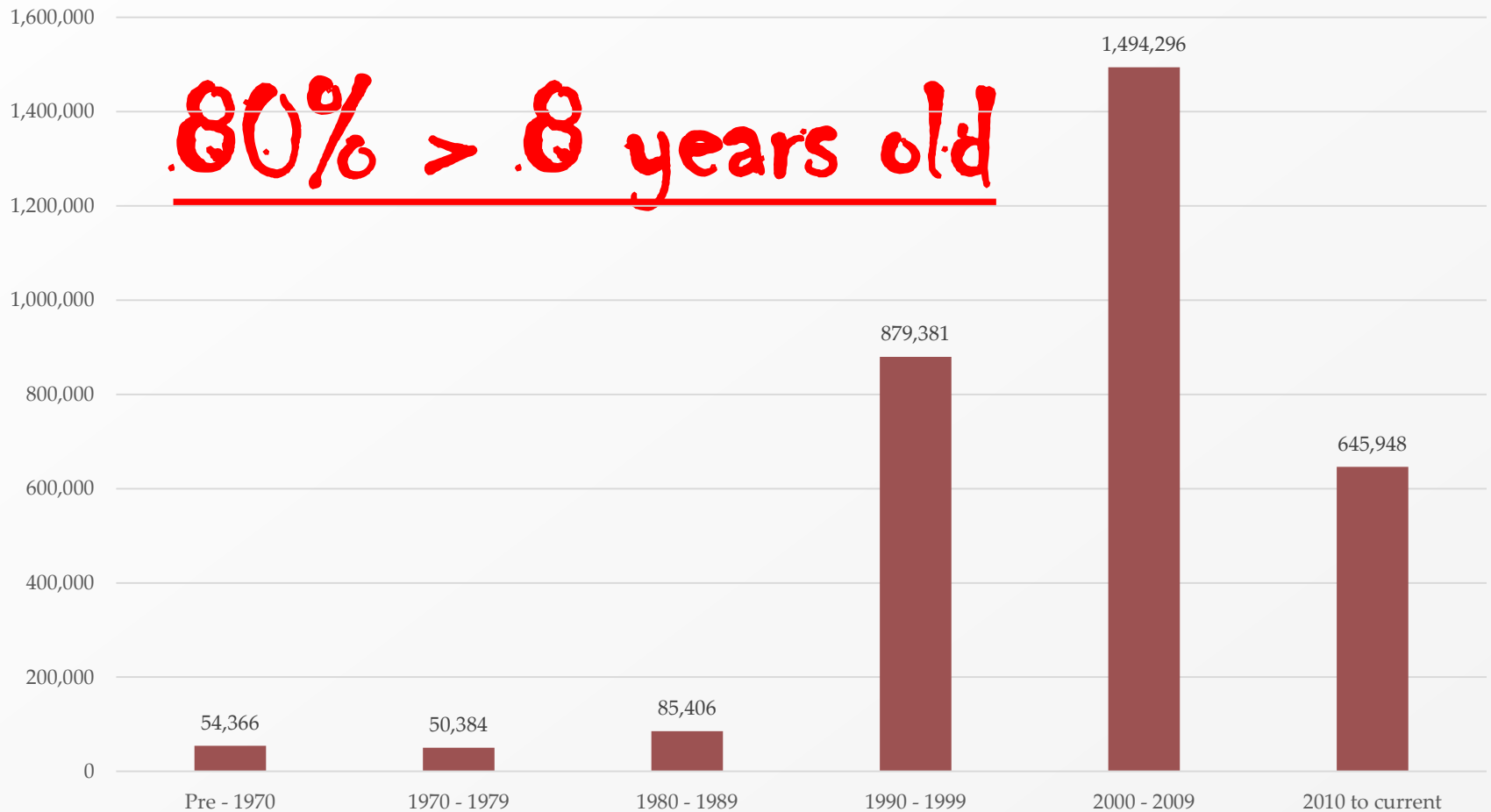
ISLAMIC STATE (Isis) are plotting to use toy drones to bomb major events like football matches and music festivals in Britain, it emerged today.

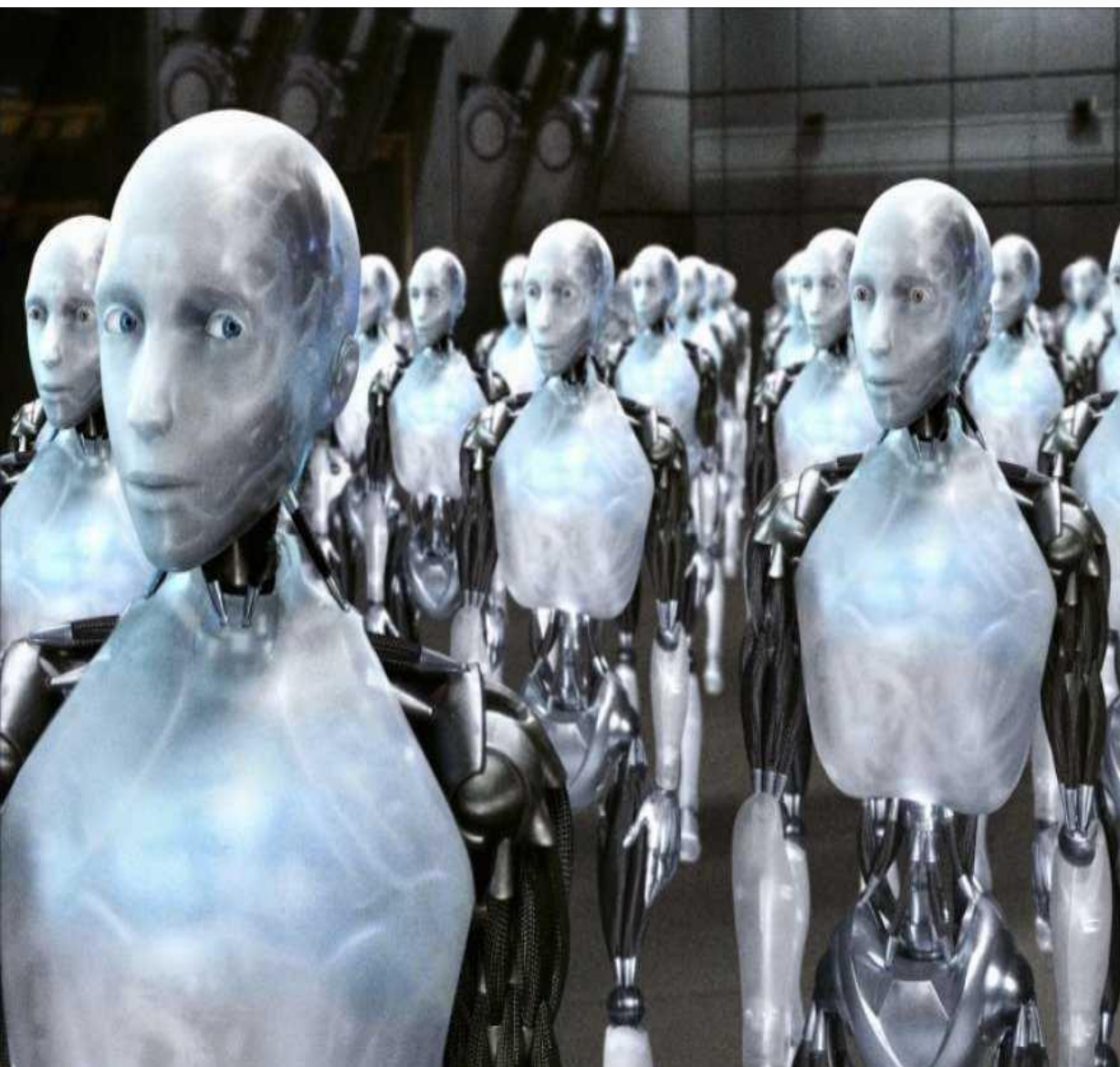


Isis could be plotting a drone bomb attack in Britain

Terrorists want to use the unmanned machines - available for as little as £100 on the high street - to drop explosives on large crowds at popular sporting and cultural gatherings.

# Total registered NZ passenger cars and vans (3.2million) by age











# Robotic dairy farming: a better life for man and cow

A farmer runs his dairy operation several hundred kilometres away with the aid of technology, writes Pat Deavoll.



Alvin Reid is content to manage his shifts from his computer in Wanaka.



JOB MADE EASY: Robotic copters spray insecticide in Shijiazhuang,



ROBOT REVOLUTION: More than 300,000 tractors equipped with autosteer or tractor guidance will be sold this year, more than doubling to 660,000 units over the next 10 years. Photo / Supplied



MILKING IT: Robotic milking machines are a \$1.9 billion industry projected to grow to \$8.5bn by 2026. Photo /














## BURGERS & SANDWICHES



**BIG MAC**  
\$ 3.89

**QUARTER POUNDER WITH CHEESE**  
\$ 3.59

**BACON CLUBHOUSE BURGER**  
\$ 4.79

**QUARTER POUNDER CHEESE DELUXE**  
\$ 3.99

**DOUBLE QUARTER POUNDER WITH CHEESE**  
\$ 4.49

**HAMBURGER**  
\$ 0.90

**NO IMAGE**  
\$ 1.29

**DOUBLE HAMBURGER**  
\$ 1.00

**DOUBLE CHEESEBURGER**  
\$ 1.69

**TRIPLE CHEESEBURGER**  
\$ 1.00

**GRILLED ONION CHEDDAR BURGER**  
\$ 1.39

**MCDONALD'S**  
\$ 1.39

**TAX \$ 0.62 TOTAL \$ 9.41**

**MY ORDER - EAT IN**

**1 X Build Your Own Burger - Meal**

**Build Your Own**

- Add 1 Patty
- Add 1 Natural Pepper Jack
- Add 1 Ciabatta Roll

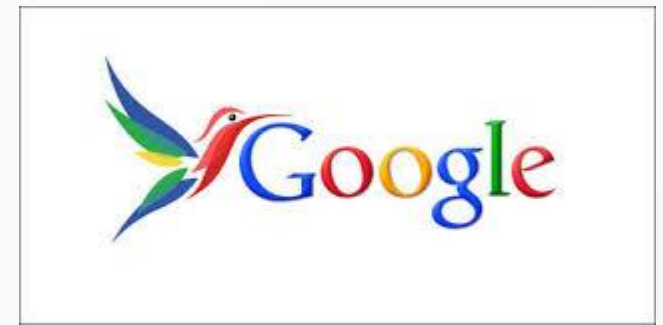
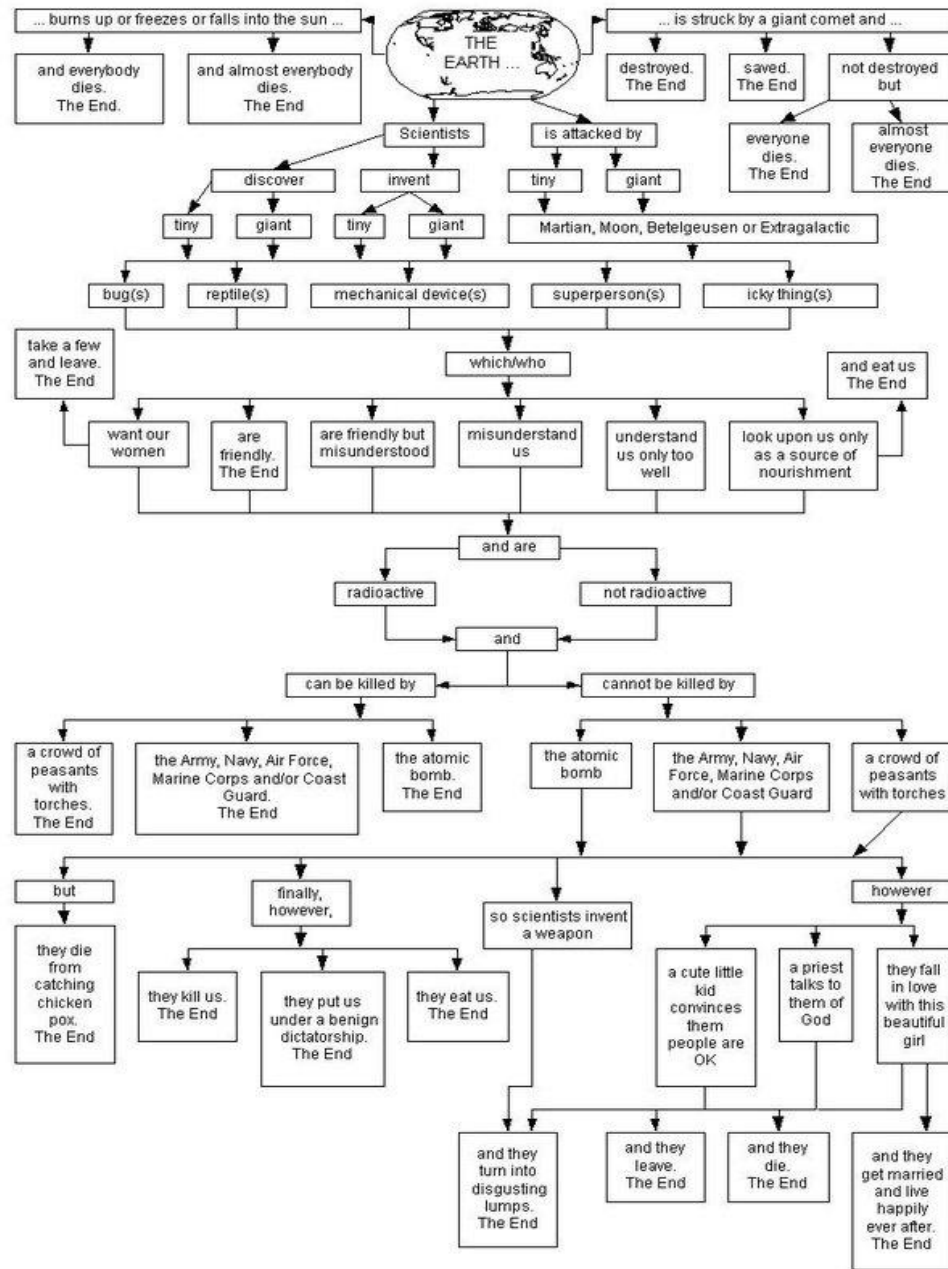
**Medium Diet Coke**

**Medium Diet Coke**

**CANCEL ORDER**

**DONE**

A photograph of the interior of a McDonald's restaurant. In the foreground, a person's arm and shoulder are visible, wearing a plaid shirt. In the background, a customer is sitting at a table near a large window. Outside the window, a red stop sign and a "No Left Turn" sign are visible. The restaurant has a modern interior with a grid ceiling and pendant lights.



# What does this all mean?

- It is not going to *happen* - it IS happening!
- STAARA is all around us.
- It will continue to grow.
- But 'where too from here?'



Warning! Danger! Will Robinson...



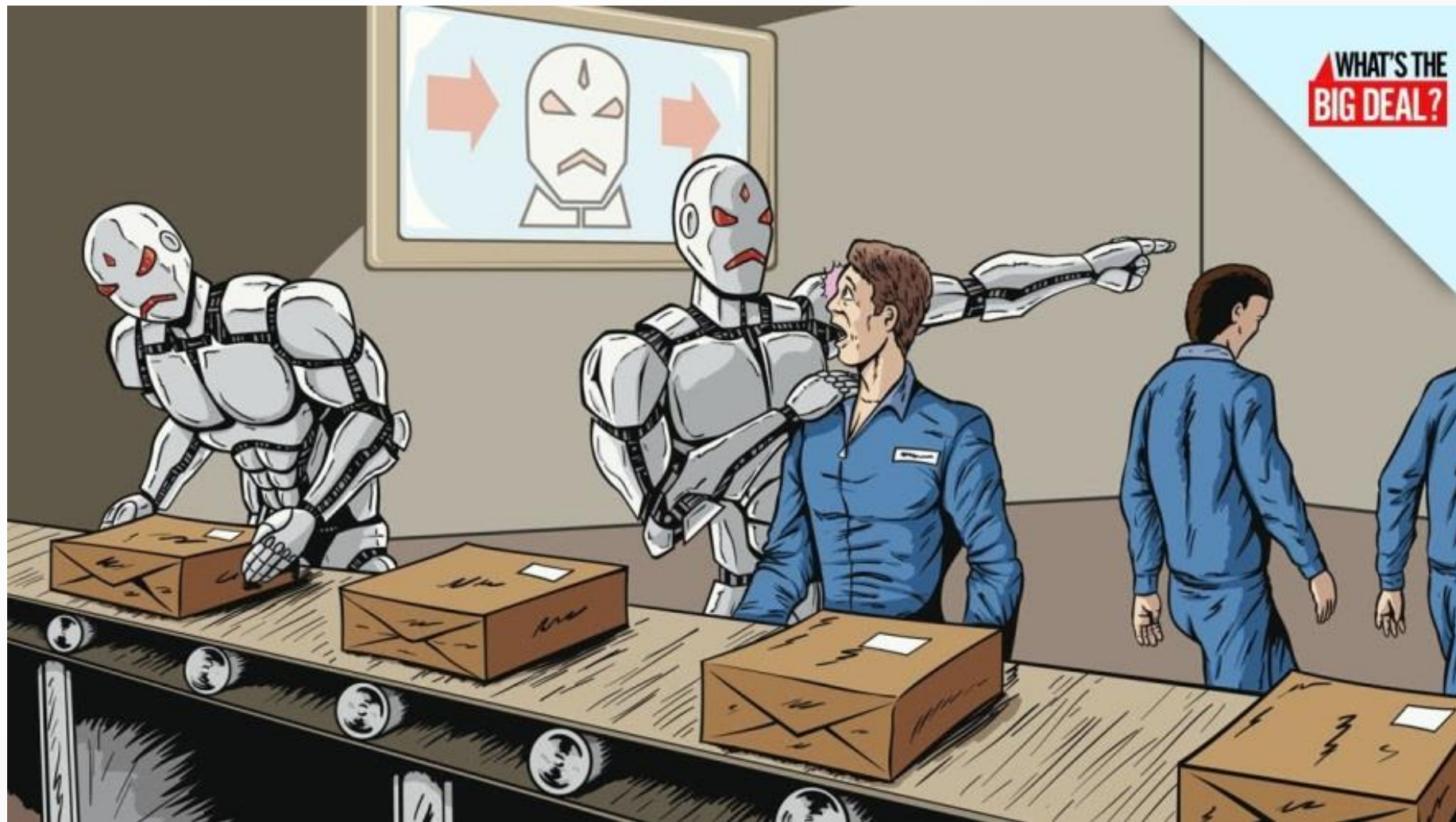


# Danger! Danger!...

- Top scientists and business people are warning of mass unemployment due to STAARA!



<< Will a Robot  
Take My Job? >>



'Futurists' suggest that by 2025...

1/3

of all jobs might be done by STAARA



The Economist warns that by this year...

50%

of all new US jobs will be taken by

STAARA

Career experts suggest that today's  
starting employees will have...

17 jobs in  
5 industries

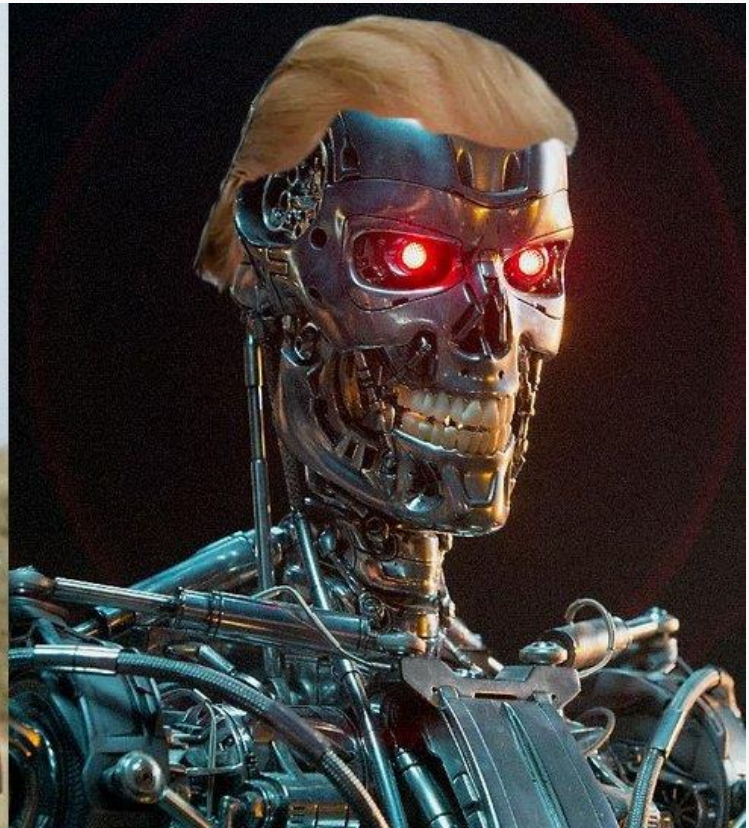
A study of occupations and job types  
suggest that...

47%

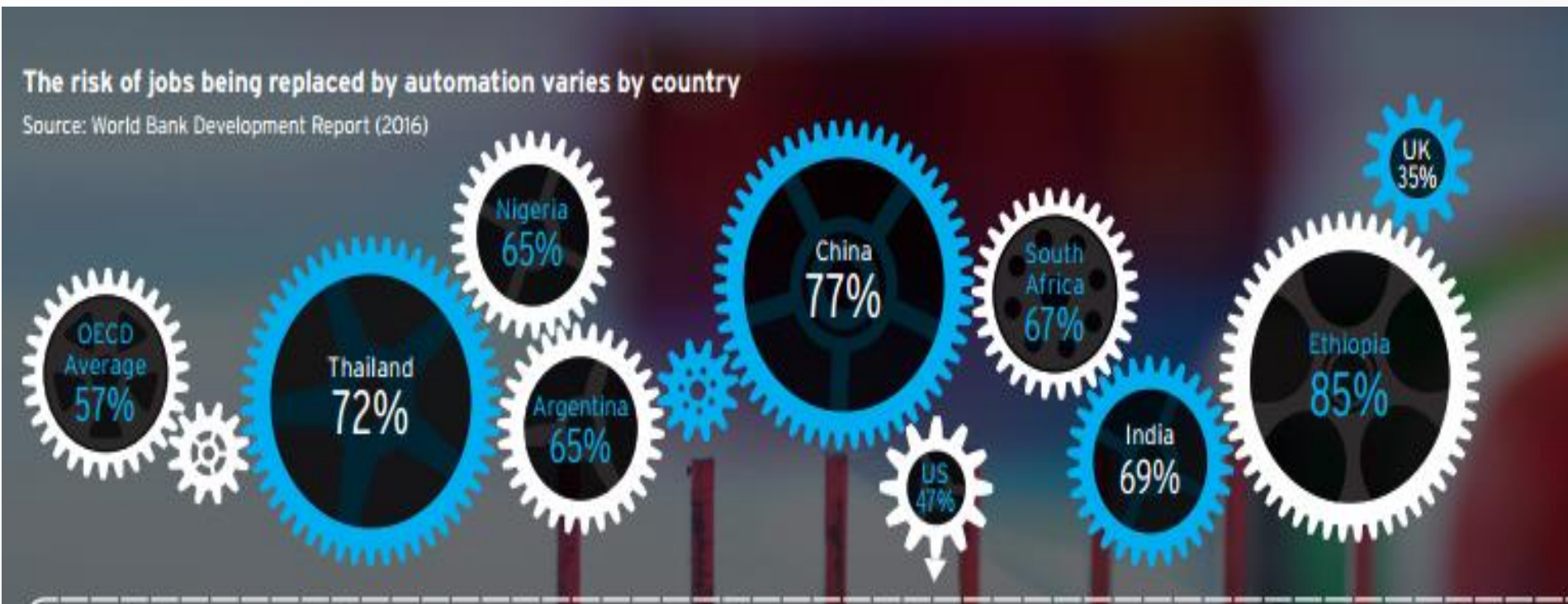
of all jobs are 'High Risk' [ie might be  
done by STAARA]



'fake news' suggests ANY job could be done by a robot!



# The STAARA Risk varies by country...



Developing countries are highly susceptible!









SAMSUNG Galaxy

Note 8

androidleo.com



Who has a mobile  
phone?!



Apple iPhone 8



# Foxxcon







MAY 25, 2016

AAPL: 99.62 1.72 

iPhone maker Foxconn has replaced more than half its workforce with robots since iPhone 6 launch

# Will a Robot Take My Job?!

“The Foxconn factory has reduced its employee strength from 110,000 to 50,000, thanks to the introduction of robots. It has tasted success in reduction of labour costs,” (Dept. Head Xu Yulian).

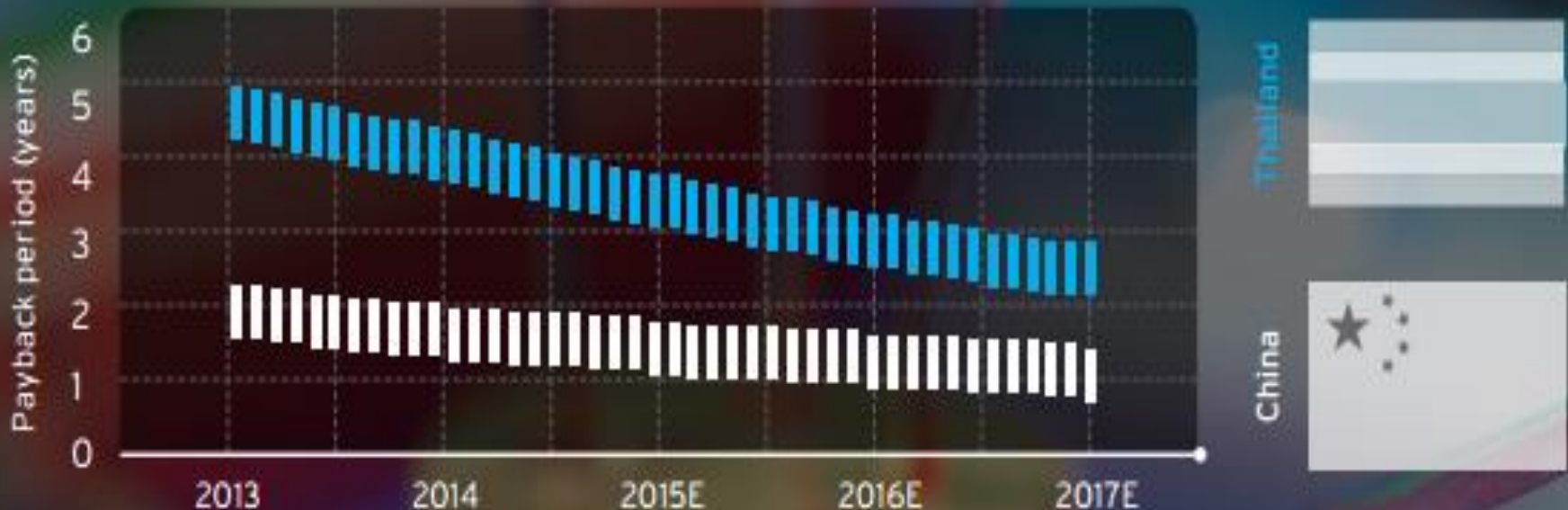
Since September 2014, more than 500 companies in the Chinese province of Dongguan have spent a total of \$630M on robot and AI technology to replace human workers.

# Will a Robot Take My Job?!

Dude – they already are!!!

The payback period for robot systems are falling

Source: Citi Research





# Yes at Foxxcon Your Job's Going!

DECEMBER 30, 2016

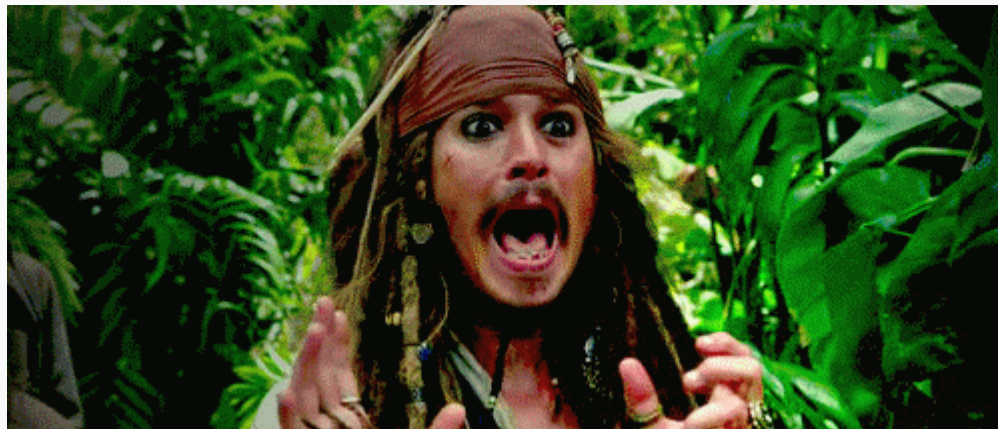
AAPL: 115.82 -0.91 ✓

Foxconn has ten fully-automated production lines, aims to totally automate entire factories

Note the business implications of this: The latest smart phones (Galaxy 8 and iPhone 8 – due out shortly) have *NOT* dropped in price! This is about profit via STAARA. What happens when there are no paid human's to buy an iPhone 13? Unlucky for some/all...?



However, before we all start  
screaming...



Deep breath! A lot of the futuristic  
47% of jobs is simply 'best guess'.

So, we wanted to know what people  
(kiwis) thought...



# Lets find out what NZ workers think!

- 505 New Zealand employees, working 20 hours/week min. 52% female, 67% married, education (23% high school & 33% uni degree), 72% private sector, 43% small firms (<50) & 22% large-sized firms (1000+), aged 19-75 (average 34 years)

# Think STAARA will take ya job?

| STAARA items   | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree |
|--|-------------------|----------|---------|-------|----------------|
| My job could be replaced by STAARA.  | 36%               | 31%      | 17%     | 13%   | 3%             |
| I am worried that what I do now in my job will be able to be replaced by STAARA.           | 36%               | 39%      | 15%     | 8%    | 2%             |
| I am worried about the future of my organisation due to STAARA replacing employees.        | 32%               | 40%      | 14%     | 12%   | 2%             |
| I am worried about the future of the industry I work in due to STAARA replacing employees. | 32%               | 39%      | 12%     | 14%   | 3%             |

# Think STAARA will take ya job?

- Overall, STAARA job insecurity measure (all 4 items, 1-5 scale), Mean=2.1. Low right!?  $M=1.7$  (2015 data).  $Oz M=2.2$ ,  $US M=2.7$ !
- 23%=no fear! Total of 85% of sample think there is little to moderate levels ( $M=1.0$  to  $3.0$ ) regarding fear from STAARA.



# So, is STAARA a problem?

- Further analysis showed STAARA job insecurity was negatively linked to: job satisfaction, org. commitment, and career satisfaction. Also, positively related to turnover intentions, job burnout, and anxiety and depression. This reaffirms our earlier work that STAARA job insecurity is detrimental

# So, what links with STAARA?

- Analysis showed HRM support and global perceptions of org. support were negatively linked to STAARA job insecurity (☺).
- Complex jobs were negatively linked to STAARA job insecurity while job repetition was positive (replicating 2016 NZ data).
- So, your type of job and organization can help!

# STAARA awareness

| These all link positively with STAARA job insecurity                            | % Yes |
|---|-------|
| I talk about the potential of STAARA in my workplace with my coworkers          | 20%   |
| I talk about the potential of STAARA in my workplace with my friends and family | 26%   |
| I have actively researched how STAARA may affect my current job                 | 13%   |
| I have actively researched how STAARA may affect my current industry            | 18%   |
| I am looking into new training opportunities                                    | 44%   |
| I keep my career opportunities to the forefront                                 | 48%   |



# STAARA interpretation?



Blissfully blind? No, more  
quietly cautious...

## 2<sup>nd</sup> Final thought...

- Other analysis we have done has found that people aren't always the best at guessing their own potential STAARA demise! For example, Bartenders v. CEOs...
- Don't panic! Keep calm. Research. Keep your eyes open. Maybe buy human made!? 😊

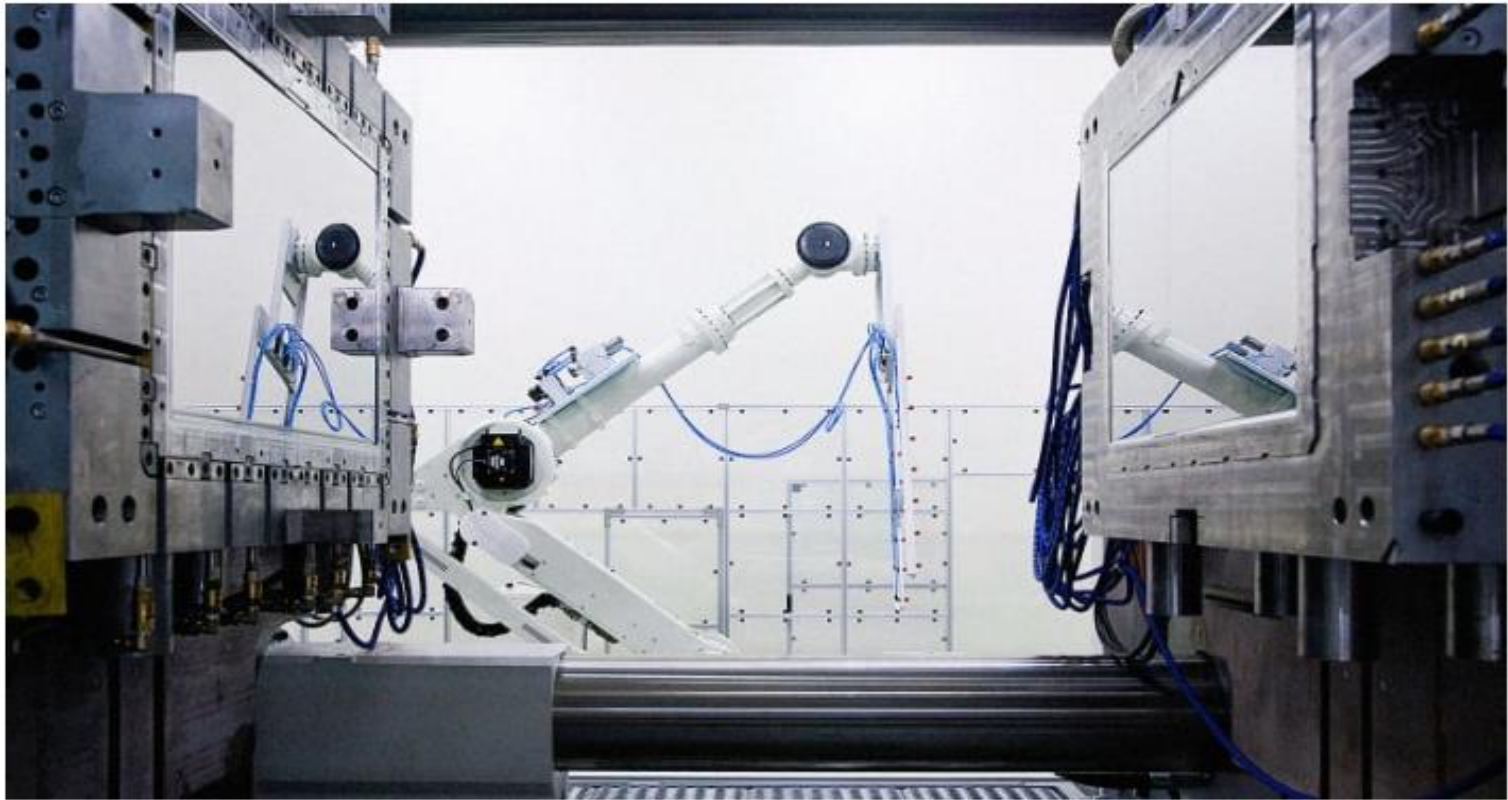
# What holds the future?





# One San Francisco Politician Is Exploring A Tax On Robots

Taxing companies that use robots to help pay for the workers they've displaced has been floated as a theoretical solution to a post-automation world. Now San Francisco Supervisor Jane Kim is looking into whether it's what the tech capital needs.



[Photo: PFkatka/iStock]

# My Final Thought is...



We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction.

(Bill Gates)

**STAR WARS DAY**  
**MAY THE 4<sup>TH</sup>**  
**BE WITH YOU**

