

“The people have spoken...  
...the bastards”\*

(\*US Political Candidate Dick Tuck on his 1966 Election defeat)

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*Lessons for Robotics from Brexit & GMOs*

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*After Brexit, you feel angry, powerless, sickened  
that your life has been turned on its head by  
nameless others?*

***“Democracy forces us to try on each other’s clothes.  
I would have carried on ignoring the unhappiness  
of much of the country....  
but I can’t ignore this”***

Ian Leslie [Blog on Brexit](#)



What's this got to do with Robotics?

*It's about the changing expectations  
and influence of society  
and  
the 'death of deference'!*

*It requires a change in the approach of research  
...as well as everything else*

The latest buzzword for this is

**Responsible Research and Innovation**

# Mapping RRI

HOW?

WHAT?

WHY?



Anticipate	Reflect	Engage	Act					EPSRC/FRIICT Framework
Public Engagement	Gender	Science Education	Open Access/ Science	Ethics	Sustainability	Governance	Social Justice/ Inclusion	European Commission Principles for RRI
Inclusion	Moderation	Deliberation	Modularity & flexibility	Subsidiarity	Adaptability			ResAgora Principles for RRI
Capabilities	Capacities	Institutional entrepreneurship	Culture of transparency, tolerance & rule of law					
Social benefits & impacts	Ethical issues	Environmental benefits & impacts	Cultural benefits & impacts	Economic benefits & impacts				MATTER Principles for Responsible Innovation
Stakeholder Participation	Governance & accountability	Openness & Transparency						
Growth	Trust/ Public acceptability	Solve grand challenges	Avoid bad impacts	Collective good	Meet needs	Accountable science	Common language in papers & frameworks	
All voices considered	For and with society	Collaborative	Participative	Anticipate negative impacts	Sustainable	Not just about money		
Respect diverse views	Values sensitive	Safe & ethical by design	Evidence based	Anticipatory governance	Openness as standard	Inclusive		

*How are these interpreted for  
Robotics & AI?*



# Learning through lessons from the past

Brexit & GMOs provide useful learning  
for Robotics

# Protests are often a proxy for other issues

- Brexit was about views and lives being ignored, marginalised, powerless
- GMO about abuses of corporate power, environmental degradation, human hubris
- Both reflect feelings of ‘things’ going beyond our control and understanding
- All reflect a nostalgia for ‘simpler’ times

# Relevance for Robotics?

- Robotics is often about humans relinquishing control - what are the implications of that?
- Roboticians have a reputation for being in thrall to the technology - are we forgetting people?
- What we can do scientifically and what we should do for humanity's good - are they the same?
- Hubris is at the heart of every story about robots gone bad. Beware!

# Hype breeds distrust

- Hype & hyperbole on all sides resulted in distrust & disengagement
- Hysteria made it hard to tell information from the misinformation (GM, Nano, Synbio & Brexit)
- Lies, damned lies & statistics are unmasked but too late? (Brexit)
- Not engaging (GM) leaves a communication vacuum allowing misinformation to take root
- Quick soundbites ‘Take control’ ‘Frankenfoods’, dominate if alternative vision is not clear & personal

# Lessons for Robotics?

- Careful what you promise vs what you deliver (Prof Richard Jones 'Economy of Promises')
- Hype vs reality damages confidence of investors, funders as well as public (lesson from Nanotech)
- Resist hyperbole
- Communicate your vision clearly, authentically & early

# The issues are real

- Brexit - immigration, unemployment, inequality, fear are real and in plain sight
- Concerns about corporate power, environmental release & food system re GM are widely shared
- They just weren't thought of as important *enough*
- There weren't enough existing mechanisms to demonstrate concern, protest & opportunities to influence
- Ignoring concerns destroys trust

# What issues are you perhaps ignoring?

- Robots replacing jobs?
- Taking the humanity out of caring?
- Use and misuse of your research down the line?
- Problems with the AI behind the robot?
- Is ethics of use beyond your responsibility?  
Drones in combat; implications of autonomy etc

# Are the benefits real?

- GMO didn't focus initially on benefits to user - more about the great tech & benefits to business
- Remain camp for Brexit focused almost totally on fear of leaving, not benefits of remaining
- Both thought there was a one theme answer
- Both were so sure of their rightness they forgot to consider alternatives
- What if others don't even agree it's a benefit?



# Lessons for Robotics?

- What is the real benefit of your work for people and which people, who will be disadvantaged?
- Balance of vision & evidence (don't forget social and cultural benefits & risks)
- How do you know users think it's a benefit too?
- You might not know best. Don't be cocky

# To summarise!

- Think yourself into other people's clothes
- Really listen to concerns & respond
- Ensure a benefit for people, not just fun science
- Think carefully about what might go wrong and how you might prevent it
- How will you demonstrate trustworthiness?

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