

- # A Study in Chrome

---

## THE ETHICS OF SILVERSIDE

# WHO ARE WE?



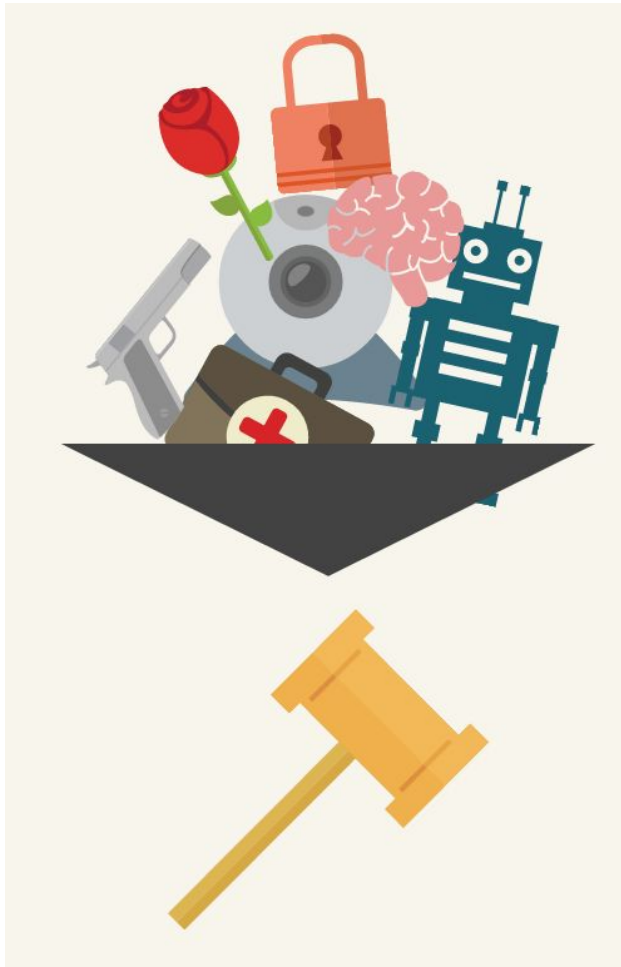
**TOM WILLIAMS**



**GORDON BRIGGS**



**WILLIE  
WILSON**

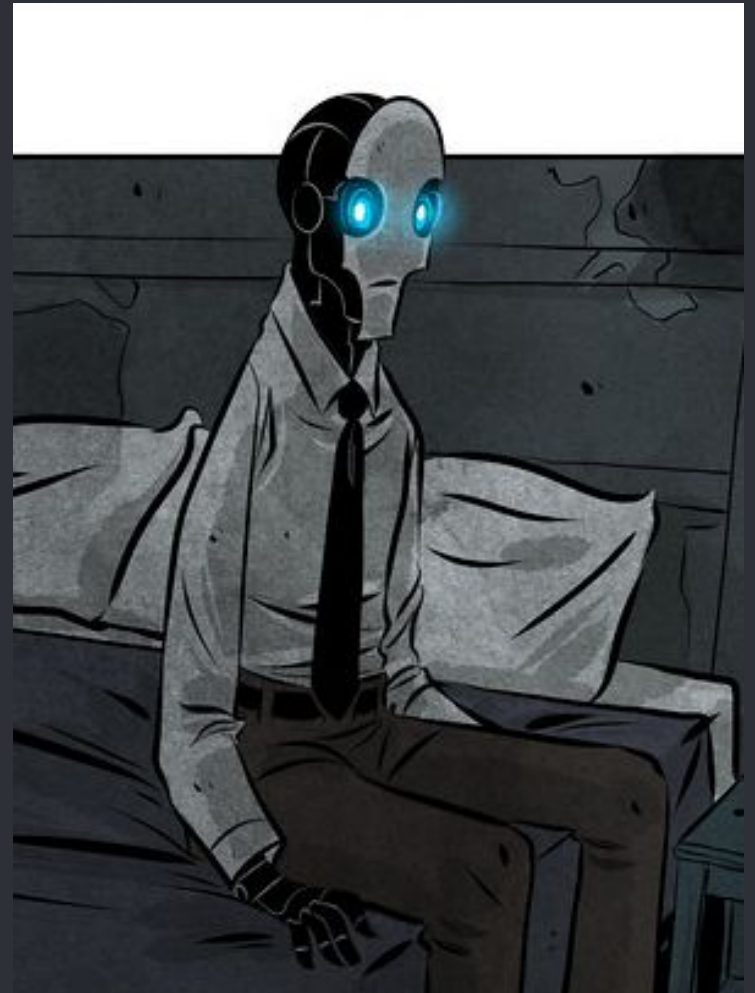


---

# ROBOT ETHICS

# AUTOMATA: SILVERSIDE

---



## Outline

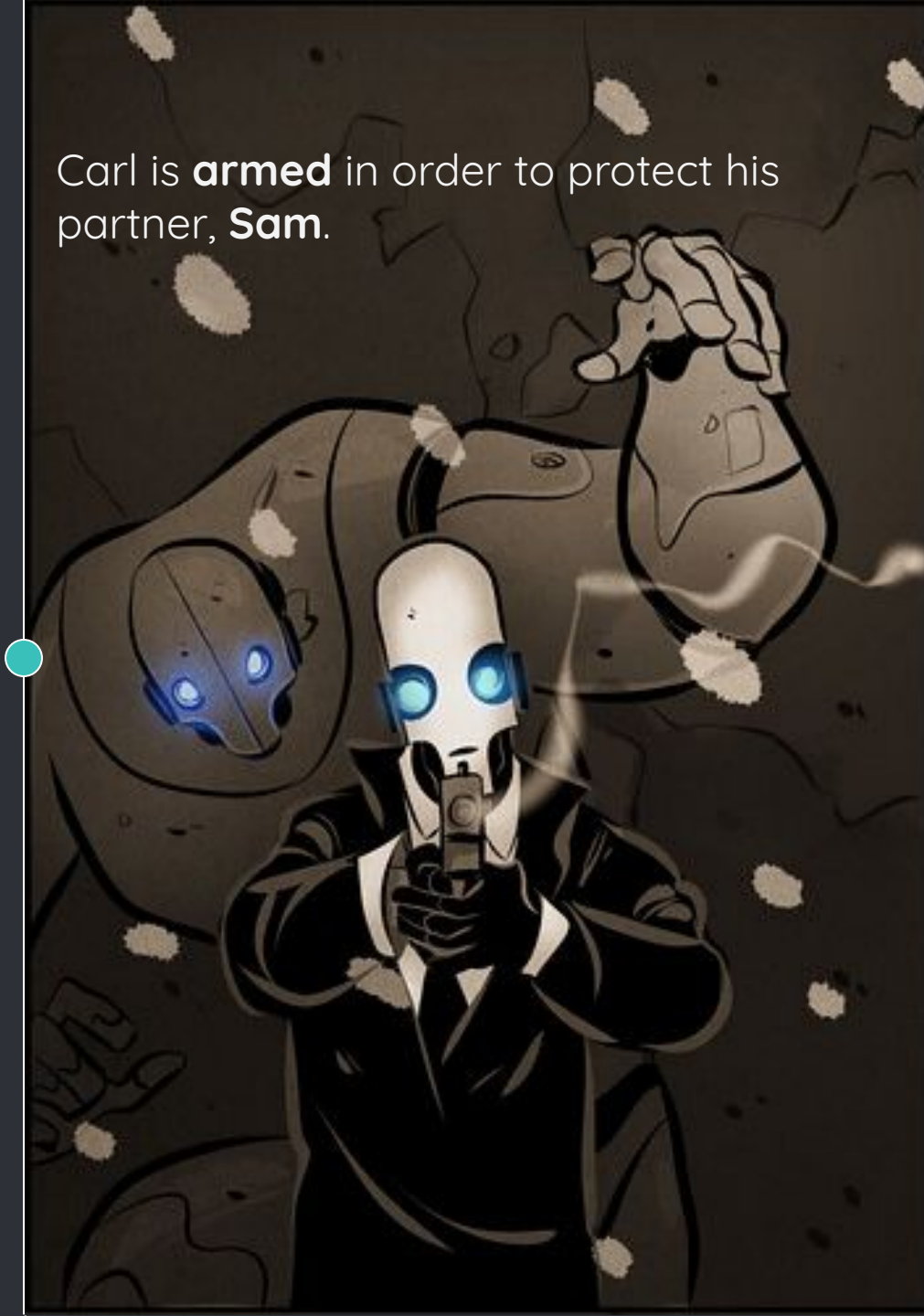


- 1) How is it portrayed in *Silverside*
- 2) What is the state of the art?
- 3) What do the experts have to say?



**SHOULD ROBOTS  
HAVE GUNS?**

Carl is **armed** in order to protect his partner, **Sam**.



However, the existence of a **backdoor** puts Sam's safety **at risk**.

That time signature. There is something. In the. Nitch. Sig. Time.



Help.



● Armed Robots in Use **TODAY.**

**Goalkeeper CIWS**



Short-range defensive weapon system, **fires autonomously**

**Samsung SGR-A1**



Sentry used to guard the Korean DMZ, **fires autonomously**

**Guardium UGV**



Autonomous Israeli vehicle used to patrol Gaza border, **RC weapons**





# The Debate

Should Fully-Autonomous Weapons be Banned?

## The Experts



### Ron Arkin

Roboticist,  
Georgia Institute of  
Technology

Argued **against** a ban\*

\*but for a **moratorium**



### Stephen Goose

Director,  
Human Rights Watch

Argued **for** a ban



Arguments **against** a ban on  
autonomous, armed robots.



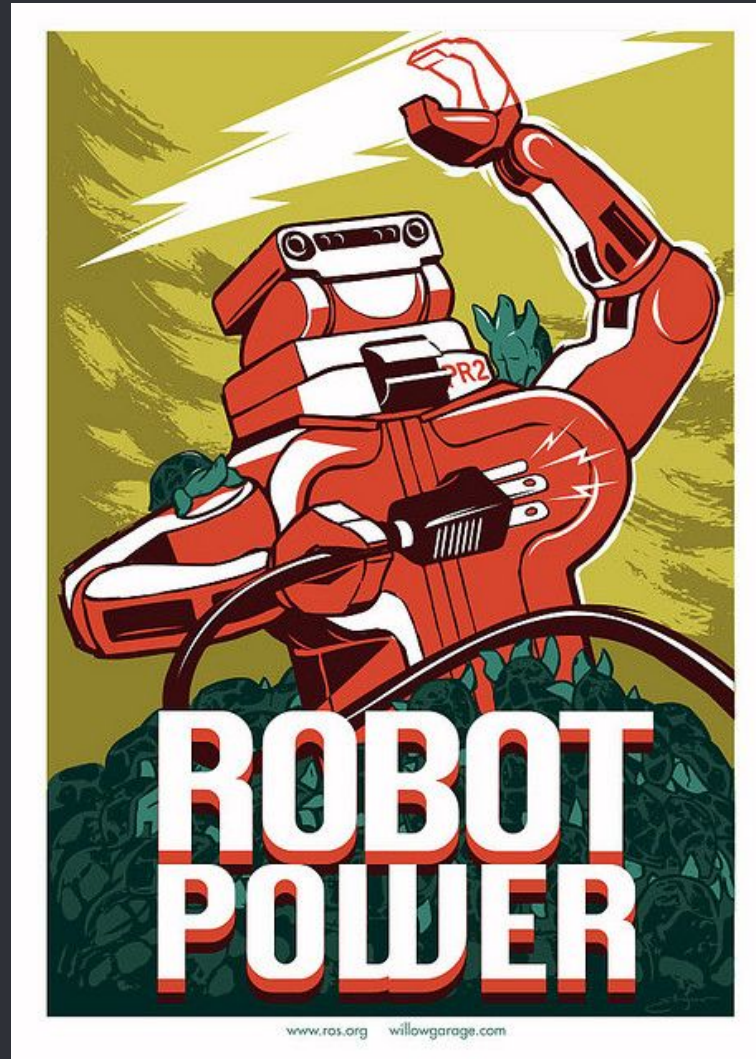
- Arkin's Solution: The Ethical Governor

- **Idea:** A robot could consult the Laws of War and Rules of Engagement before taking a proposed action, to ensure that it is **morally permissible**.



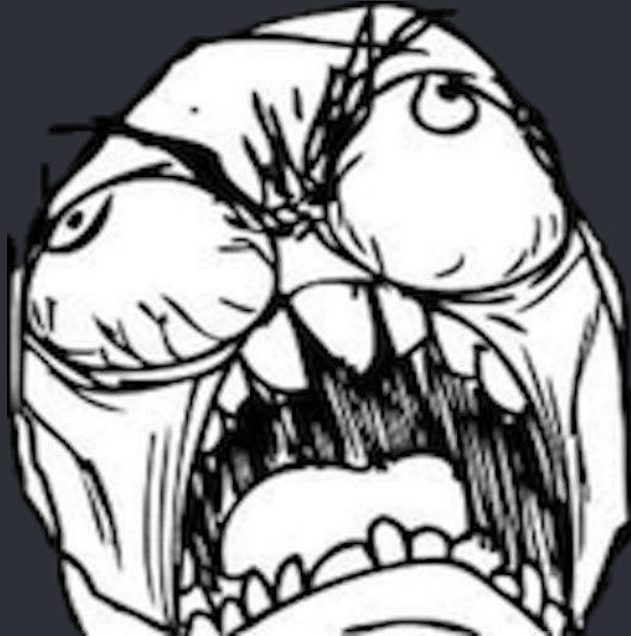
<http://ellingson.cc/willow/>

- Why might robots do better?



● Why might robots do better?

- Robots can be designed **without emotions**



## Why might robots do better?

- Robots would not be victim to **scenario fulfillment**





## Why might robots do better?

- Robots' sensors are **faster** and **better equipped** for **battlefield conditions**



## ● Why might robots do better?

- Robots could **independently** and **objectively** monitor the **ethical behavior** of **all parties** on the battlefield



en.wikimedia.org

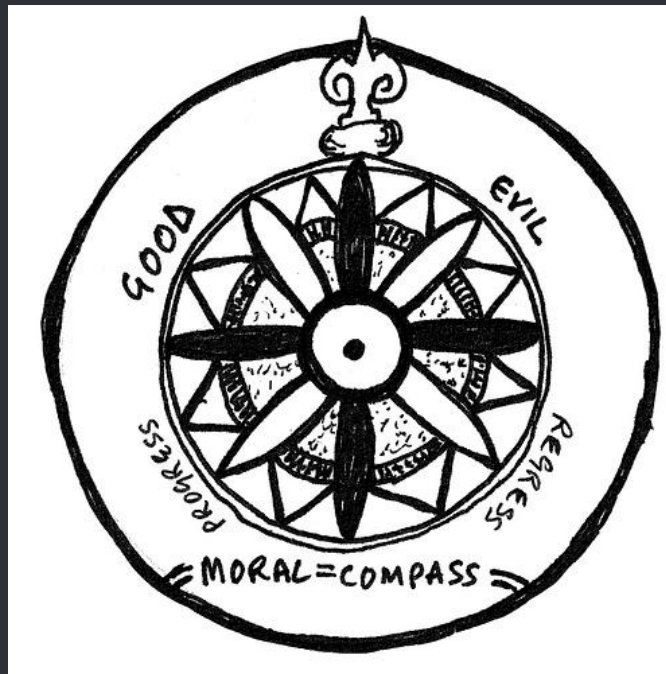




# Arguments **for** a ban on autonomous, armed robots

## ● Objections to “Killer Robots”

- Belief that it is **morally wrong** to give robots decisions over life and death



<https://www.flickr.com/photos/psd/1806225034/>

## ● Objections to “Killer Robots”

- The Geneva Conventions’ “Martin’s Clause” which dictates that weapons must comply with the dictates of **public conscience**



## ● Objections to “Killer Robots”

- Unlikelihood that robots could comply with distinctions of **proportionality** and other **inherently subjective** judgements soldiers must make



en.wikipedia.org

## ● Objections to “Killer Robots”

- Robots could **accidentally circumvent** the rights of combatants who are **injured** or who have **surrendered**



[commons.wikimedia.org](https://commons.wikimedia.org)



## ● Objections to “Killer Robots”

- The **accountability gap**: a robot can't be held liable for its actions, so who is? Its manufacturer, programmer, commander, or someone else?



en.wikipedia.org



<https://www.flickr.com/photos/73044296@N00/8366351491/>

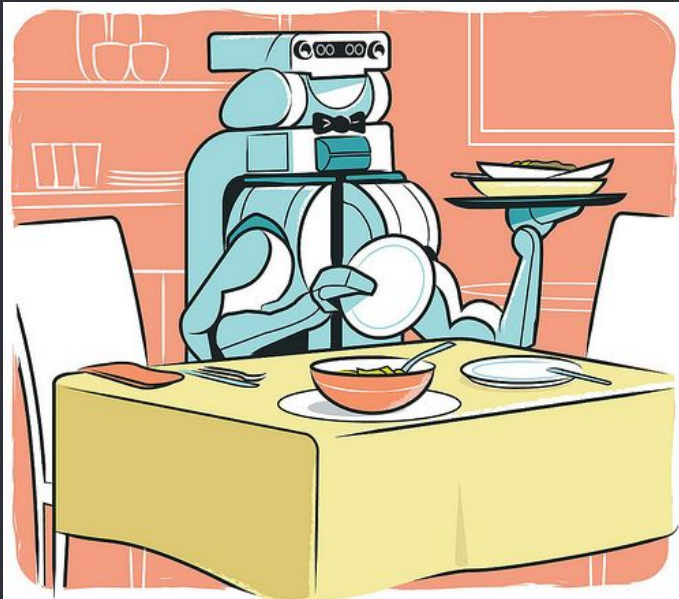


de.wikipedia.org



commons.wikimedia.org

## Food for Thought



<http://ellingson.cc/willow/>

How many advantages of the Ethical Governor actually require the ability to fire autonomously?

## Summary

*Automata's* Carl would likely be viewed **positively** by those **against** a ban, as he is able to act **defensively** and **ethically**, and possesses **human-level intelligence**, but viewed **negatively** by those **for** a ban, due to objections that some weapons simply **shouldn't exist**.



**SHOULD ROBOTS  
SHARE OUR BEDS?**



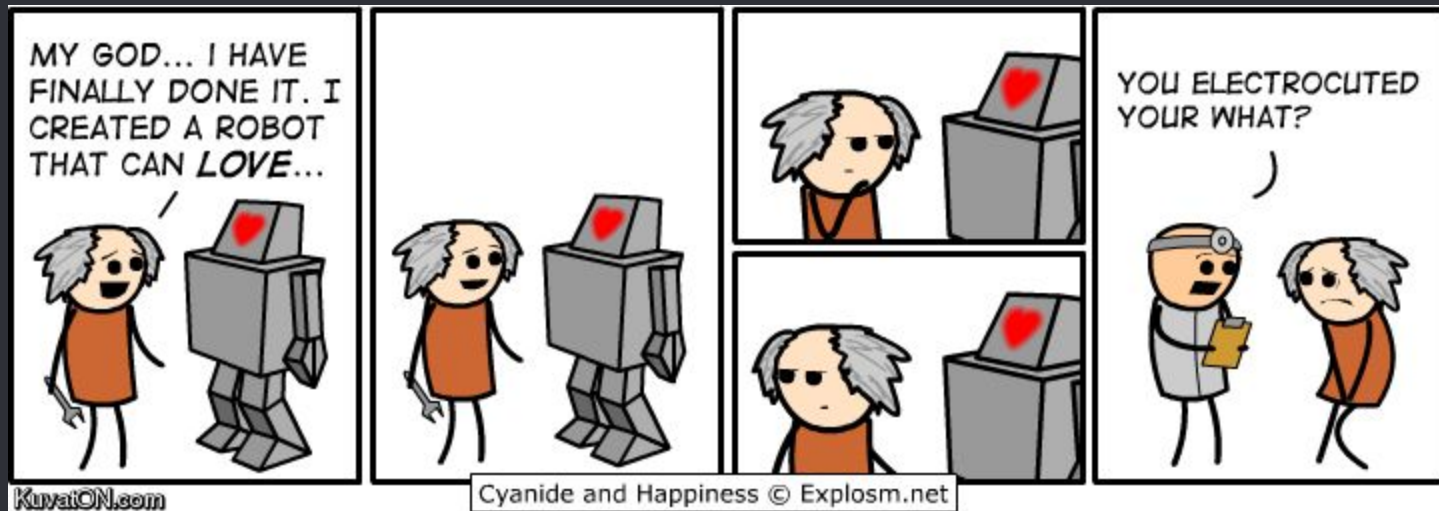
● Robot prostitutes?

They don't like my  
type much, mister.

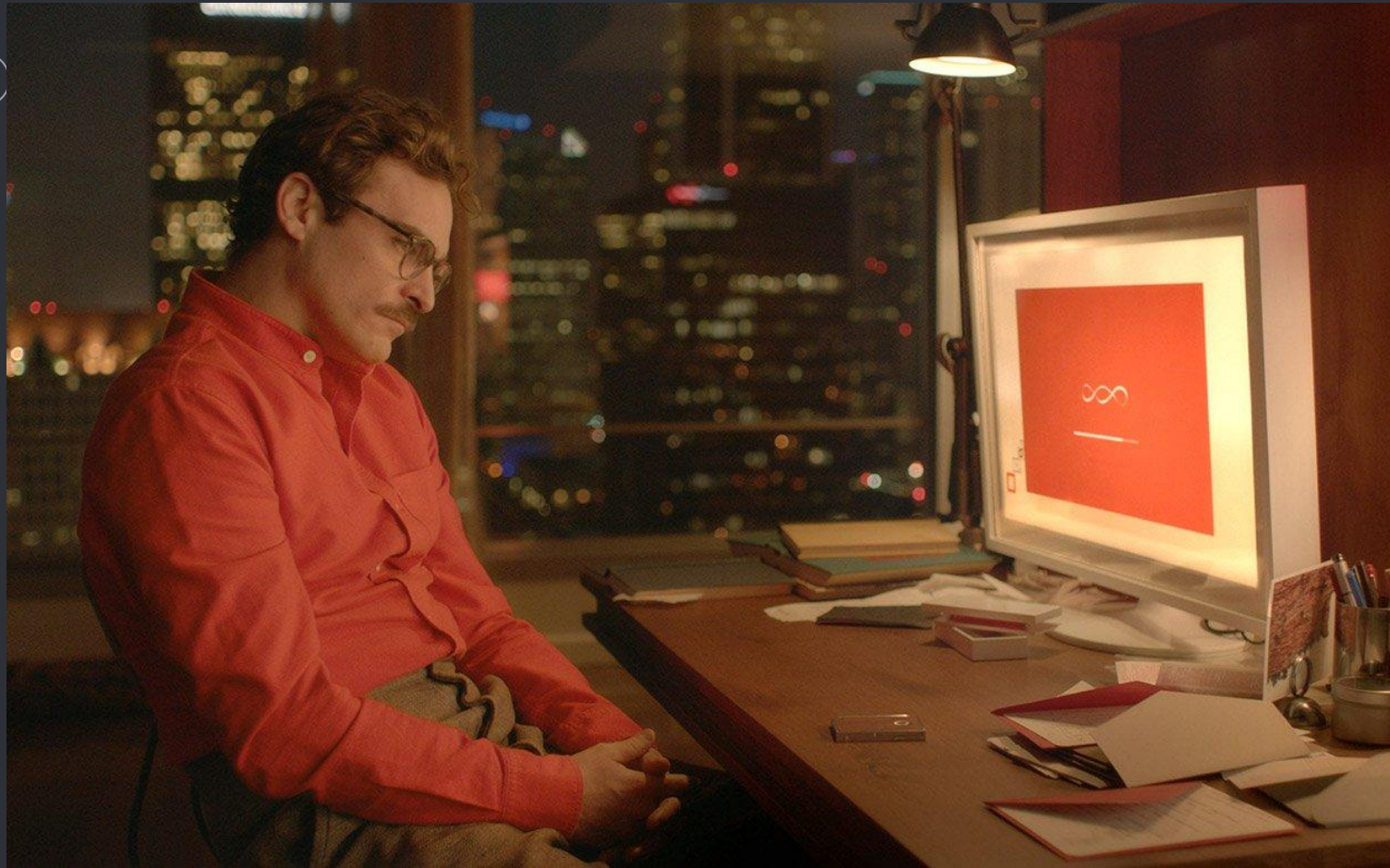
They don't like what I got.  
And they don't like what  
I do with it.



Sex with robots?



- Intimate relations with a robot (or computer)?





● Just friends?



- Emotional relationships with electronic devices?



● “Like having a pet dog.”

○ “There wasn’t a whole lot left of Scooby,” Bogosh says. The biggest piece was its 3-by-3-by-4-inch head, containing its video camera. On the side had been painted “its battle list, its track record. This had been a really great robot.” The veteran explosives technician looming over Bogosh was visibly upset. He insisted he did not want a new robot. He wanted Scooby-Doo back. “Sometimes they get a little emotional over it,” Bogosh says. “Like having a pet dog. It attacks the IEDs, comes back, and attacks again. It becomes part of the team, gets a name. They get upset when anything happens to one of the team. They identify with the little robot quickly. They count on it a lot in a mission.” (Garreau, 2007)

## Robot death or replacement

### **Soldiers in mourning for robot that defused 19 bombs after it is destroyed in blast**

- iRobot PackBot device named Scooby Doo used to detect disposed bombs in Iraq and Afghanistan



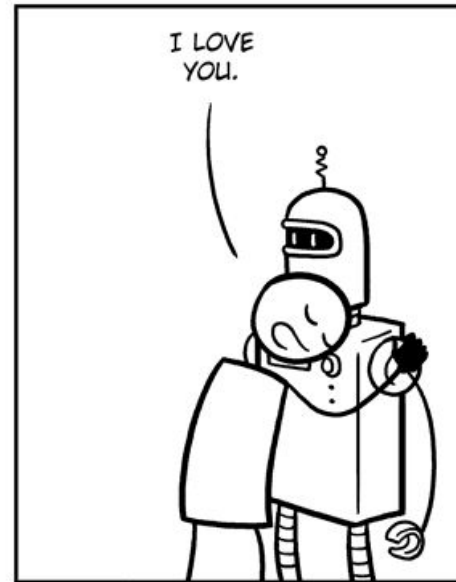
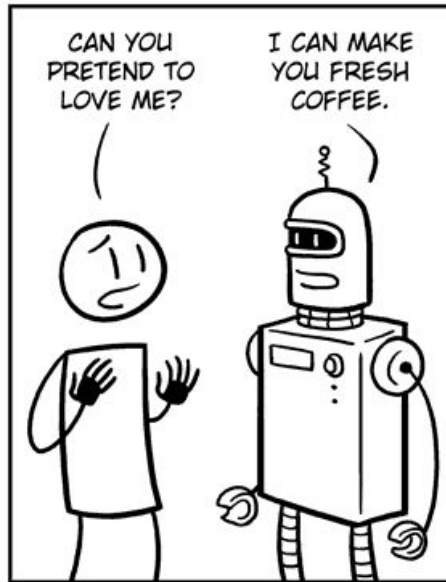
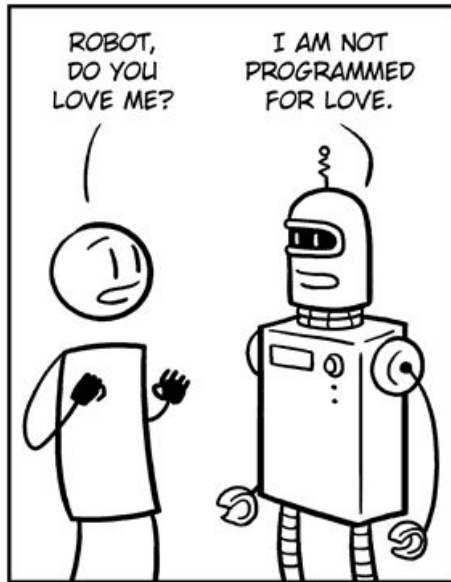
© Paul Morigi



© Paul Morigi

<http://www.dailymail.co.uk/sciencetech/article-2081437/Soldiers-mourn-iRobot-PackBot-device-named-Scooby-Doo-defused-19-bombs.html>

Can it reciprocate?



## Abuse

“For example, social robots that appear “lovable” might be able to get people to perform actions that the very same people would not have performed otherwise, simply by threatening to end their relation with the human (e.g., an admittedly futuristic sounding request of a robo-dog to dispose of a real dog: “Please get rid of this animal, he is scaring me, I don’t want him around any longer.”).” (Scheutz, 2012)

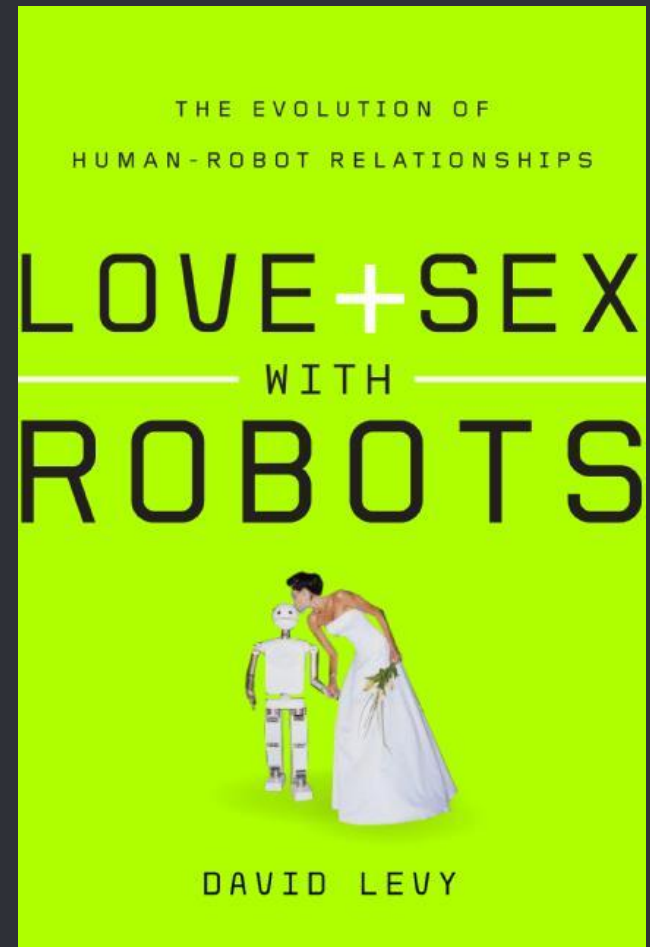
● What if...

○ robots *can* care about us the way we care about them?

we just want sex and aren't worried about whether the robot cares about us?

## Other considerations

- Do a better job
- “Not tonight, darling. I’m going to make it with the robot.”
- Robot swapping
- Borrowing a friend’s robot







“[Sexbots] will inevitably become huge commercial successes.”  
(Levy, 2007)



# WHAT MORAL STATUS DO ROBOTS HAVE?



● Types of Moral Status

○ **Moral Agency**

Are robots moral actors in the same way humans are?

*Does it make sense to blame a robot if it does something morally wrong?  
(Sparrow, 2007)*

**Moral Patiency**

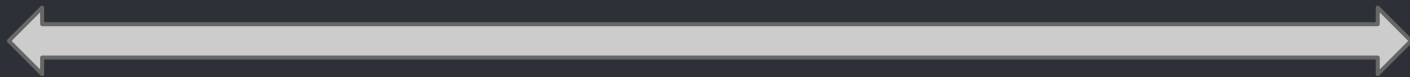
Do robots have moral value?

*Would you save a robot over a human? (Sparrow, 2004)*



What do we mean when we say  
“**ROBOT**”?

Robots vary by level of autonomy and cognitive sophistication.




**Less sophisticated**

(Teleoperated  
or very-limited  
autonomous  
behaviors)

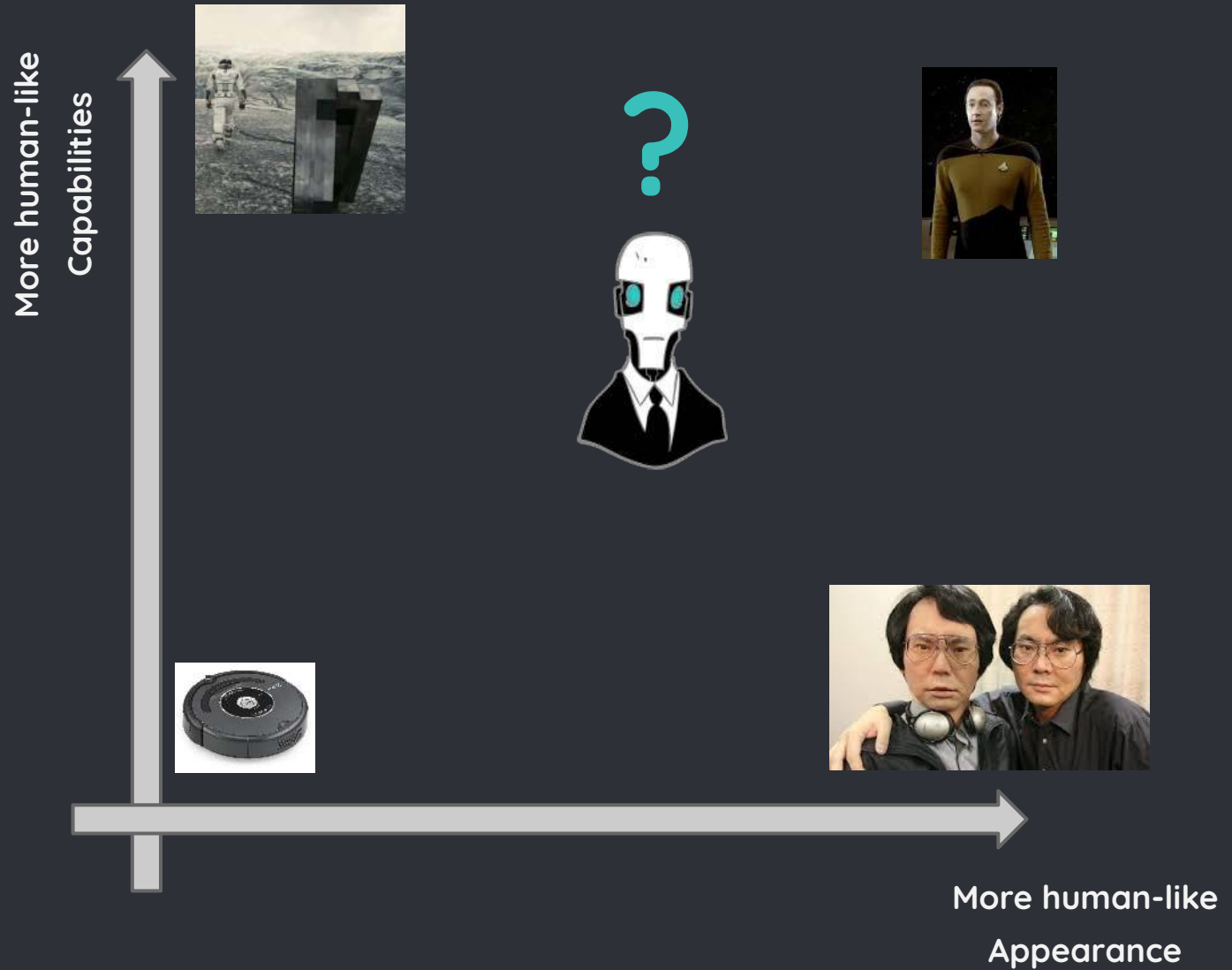
**More sophisticated**

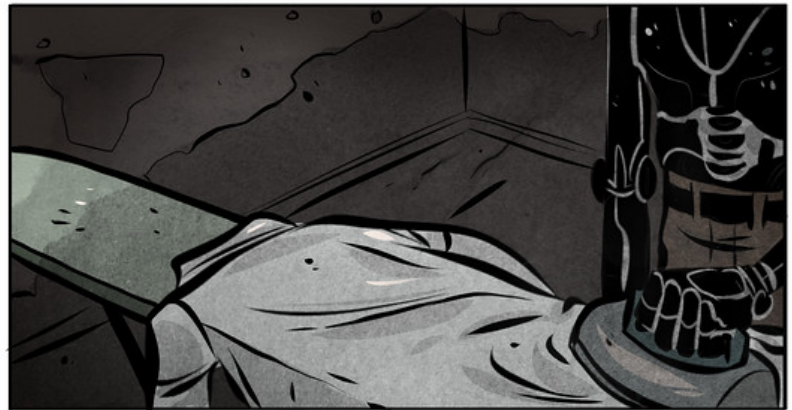
(Approaching  
human-like or  
super-human  
capabilities)

A teal circle is positioned on the left side of the slide, centered vertically. It is connected to a thin, light-colored vertical line that runs from the top to the bottom of the slide.

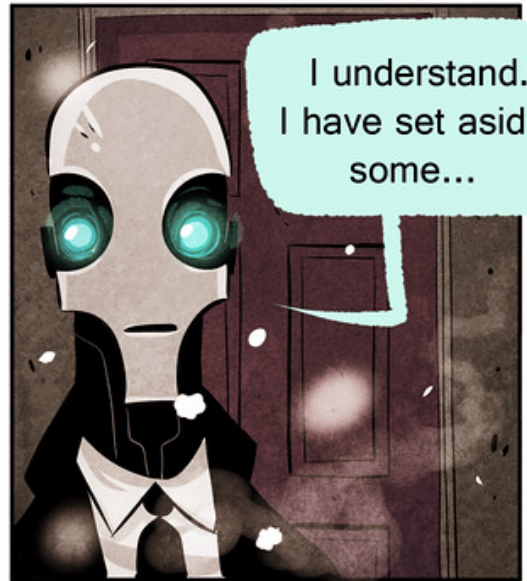
How do people make inferences about the capabilities and moral status of robots?

- Robots vary immensely in appearance and capabilities.

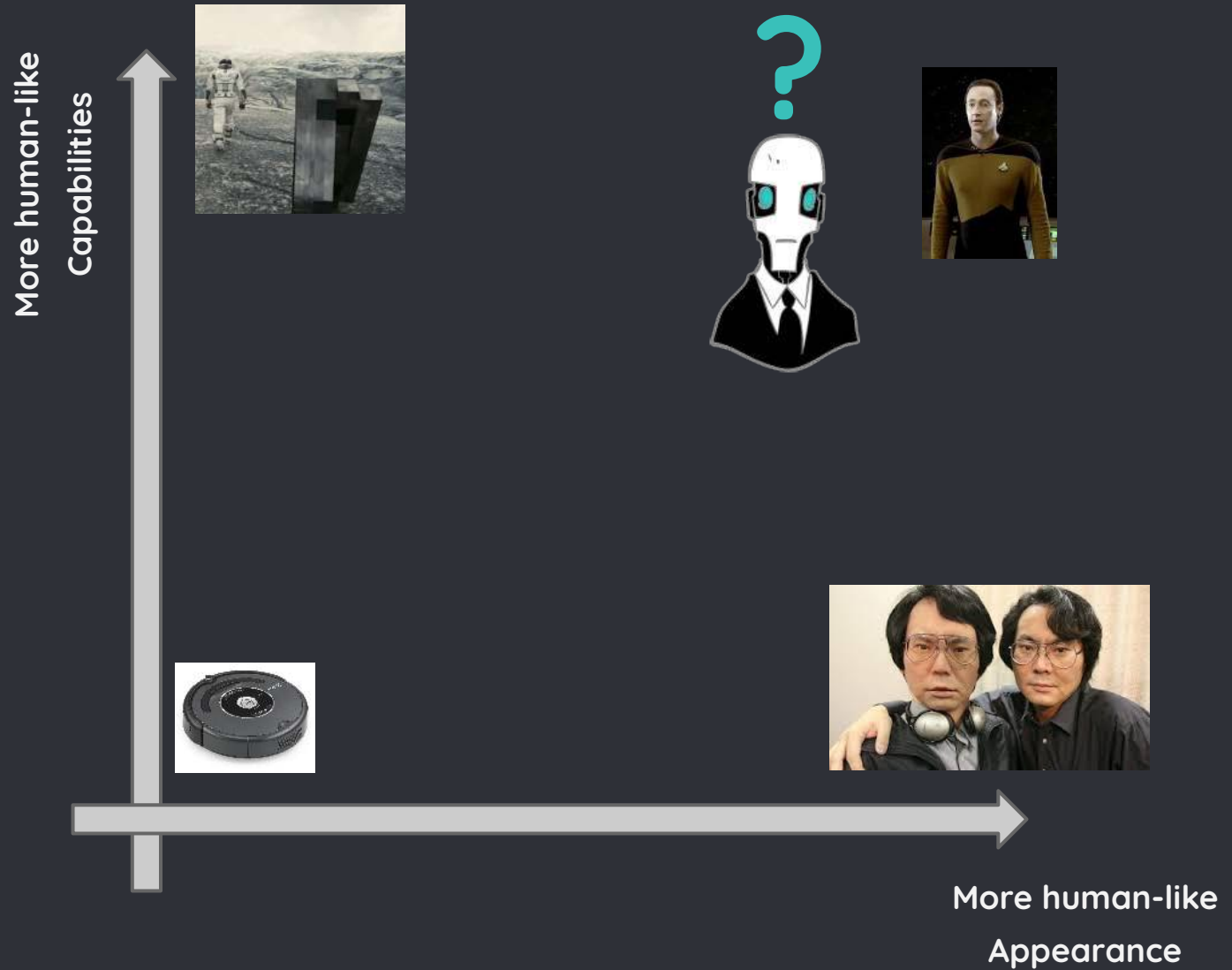








- Robots vary immensely in appearance and capabilities.





But can robots *really* have intelligence, have moral value, etc.?

● The Debate - “Can Machines Think?”

YES



Alan Turing

“Computing Machinery and Intelligence” (1950).

If an artificial agent behaves intelligently in a way indistinguishable to a human, it should be said to think.

NO

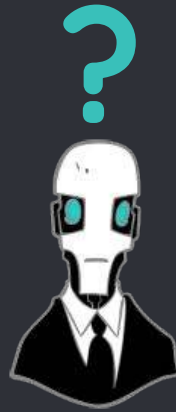


John Searle

“Minds, Brains, and Programs” (1980).

Minds need to be implemented in the right kind of stuff to be said to think like we do.

● What is Carl Made of?



## Final Thoughts

- Various upcoming issues:
- Robots with varying degrees of autonomy will enter society. Will policy and society deal with this appropriately?
- Will people make correct inferences about robots?
- How will we deal with divergent views on whether or not robots can intrinsically have moral value?

What do *you* think?

Thanks!

ANY QUESTIONS?



**TOM WILLIAMS**

[williamstome.github.io](http://williamstome.github.io)



**GORDON BRIGGS**

[gbriggs.com](http://gbriggs.com)



**WILLIE WILSON**

[affectivecognition.com](http://affectivecognition.com)