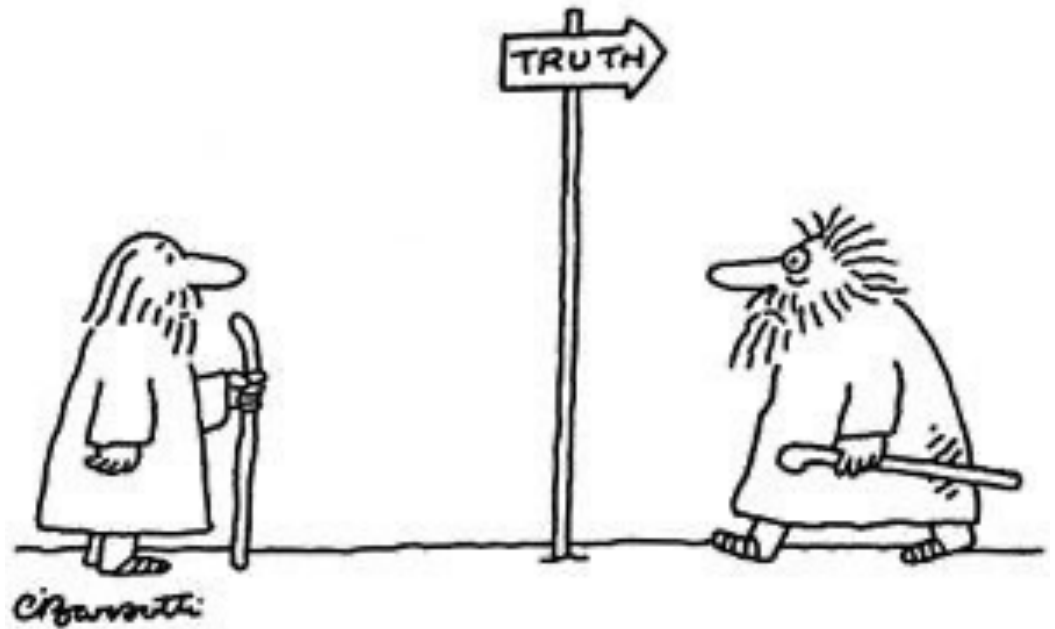
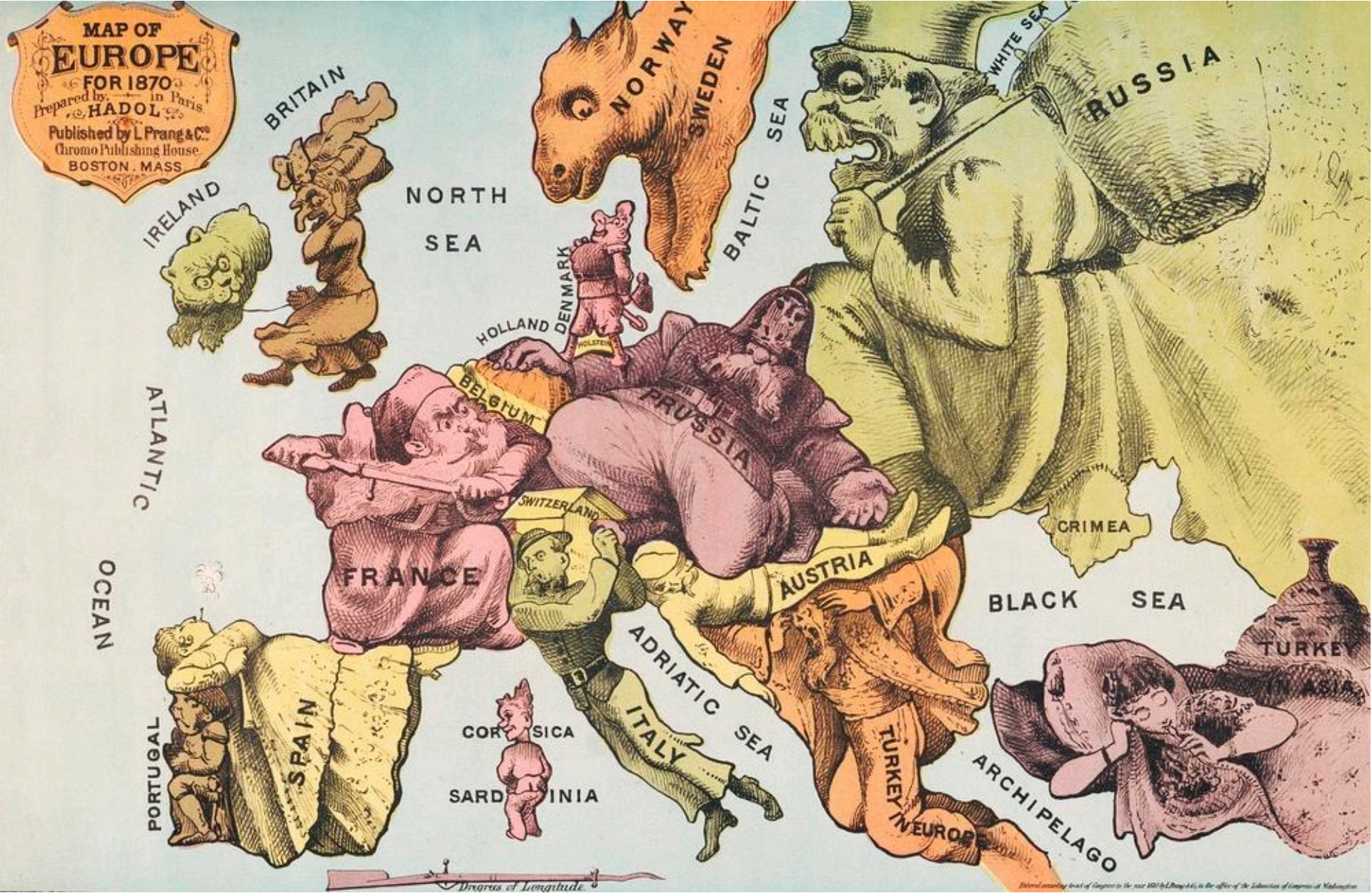


# Knowing and being

Dr YJ Erden

© Cartoonbank.com





Objective vs. subjective

[War Map of Europe](#): As seen through French eyes by Paul Hadol

# Outline


- Epistemology
- Frame problem
- Bias / epistemic injustice
- Situational knowledge & embodied cognition

Image by Mark ['Vintage Tube Map'](#)

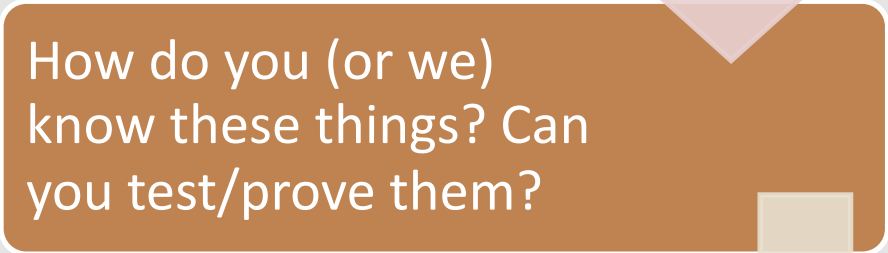


What do  
you  
know?


What are 3 things  
everyone in this room  
*knows*?




How do you (or we)  
know these things? Can  
you test/prove them?



What are 3 things you  
*believe*?



What's the difference  
between knowing and  
believing?



# Epistemology

Epistemology: philosophy of *knowledge*

What is knowledge?

Fact? Truth? Justified true belief?

Knowledge as justified true belief?

Belief: You hold something as true

True: It actually *is* true

Justified: *Why* it is true

Why are we asking?

## Moravec's paradox

(Moravec,  
1988, 15)

'it is comparatively easy to make computers exhibit adult level performance on intelligence tests or playing checkers, and difficult or impossible to give them the skills of a one-year-old when it comes to perception and mobility'



# PICTURE YOUR KITCHEN

*Exactly as it was this morning...*

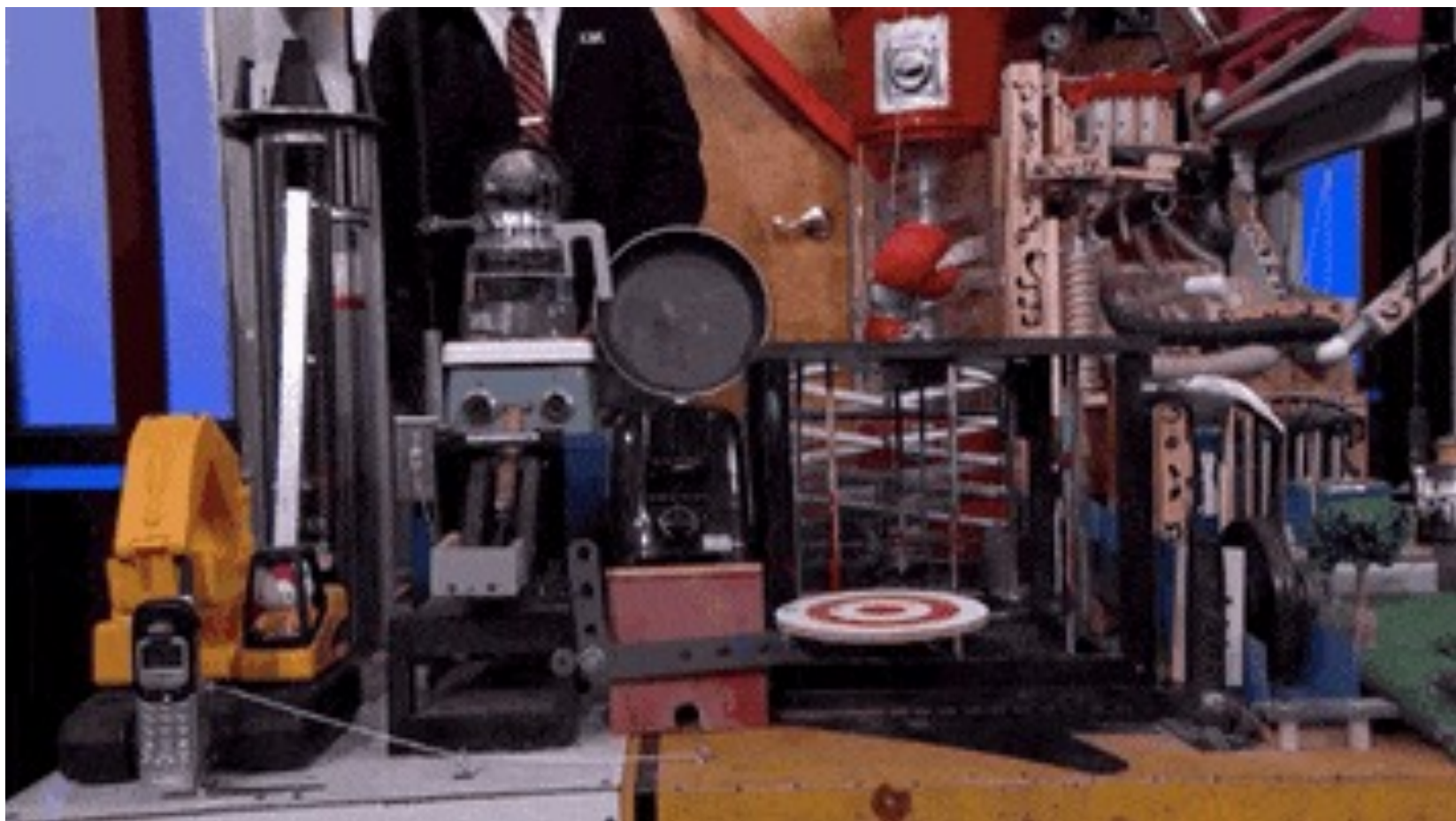
*Now consider how to make a cup of coffee...*

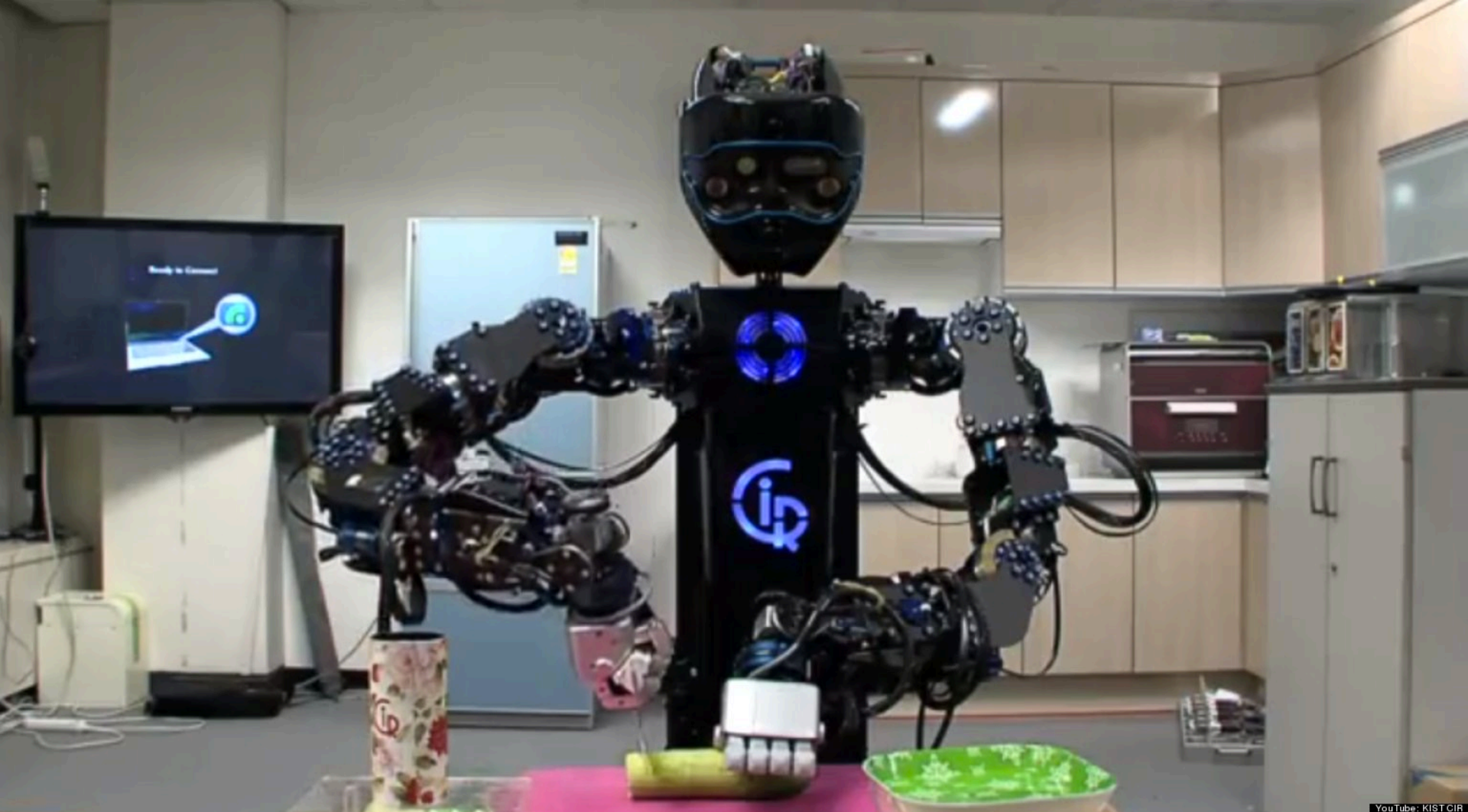
Shanahan  
(2016)

Epistemological frame problem: “How is it possible for holistic, open-ended, context-sensitive relevance to be captured by a set of propositional, language-like representations of the sort used in classical AI”

Computational (counterpart) frame problem: “How could an inference process tractably be confined to just what is relevant, given that relevance is holistic, open-ended, and context-sensitive?”

When to stop thinking...





[How to make a salad](#)

# THE FRAME PROBLEM

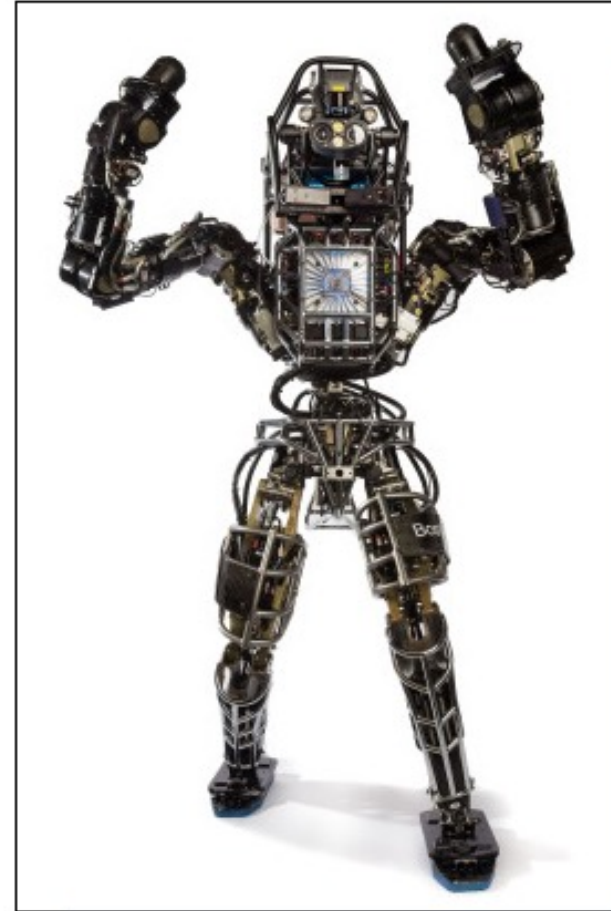
## Atlas - The Agile Anthropomorphic Robot

Atlas is a high mobility, humanoid robot designed to negotiate outdoor, rough terrain. Atlas can walk bipedally leaving the upper limbs free to lift, carry, and manipulate the environment. In extremely challenging terrain, Atlas is strong and coordinated enough to climb using hands and feet, to pick its way through congested spaces.

Articulated, sensate hands will enable Atlas to use tools designed for human use. Atlas includes 28 hydraulically-actuated degrees of freedom, two hands, arms, legs, feet and a torso.

An articulated sensor head includes stereo cameras and a laser range finder. Atlas is powered from an off-board, electric power supply via a flexible tether.

Several copies of the Atlas robot are being provided as Government Furnished Equipment for the DARPA Robotics Challenge program with delivery scheduled in the summer of 2013.





Atlas successes

# Stacking shelves isn't easy



# Another view



# The Truth About Algorithms



**RSA**

**— SHORTS —**

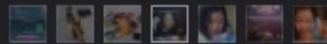
world-changing ideas

▶ ⏸ 🔊 0:08 / 2:38



**WARNING**

**OFFENSIVE  
CONTENT**



@jozjozjoz

+ Follow

Racist Camera! No, I did not blink... I'm just Asian!

542,971  
views

208  
faves

92  
comments

Taken on May 10, 2009

© All rights reserved

Image: <https://www.flickr.com/photos/jozjozjoz/3529106844/>



# FaceApp filters



**kung fu khary**  
@kharyrandolph



So this app is apparently racist as hell. But at least I'm sassy.

#faceapp [ift.tt/2pvtFG4](https://ift.tt/2pvtFG4)

2:50 PM - 18 Apr 2017

👤 10 ❤️ 22

Image [URL](#)

# Age group 18—29

## Women



**Lu Sophia**

Age: 18  
Real age prediction: 13  
Perceived age prediction: 15  
AntiAgeist score: 2  
PIMPL score: 1,3  
RYNKL score: 1  
MADIS score: 97  
Symmetry Master score: 5,2



**Margeri Ottis**

Age: 27  
Real age prediction: 23  
Perceived age prediction: 23  
AntiAgeist Score: 7  
PIMPL score: 1,2  
RYNKL score: 3  
MADIS score: 96  
Symmetry Master score: 3,1



**Kerri Kinney**

Age: 26  
Real age prediction: 18  
Perceived age prediction: 16  
AntiAgeist score: 9,5  
PIMPL score: 1,2  
RYNKL score: 5  
MADIS score: 96  
Symmetry Master Score: 14,0



**Margarita Shestakova**

Age: 25  
Real age prediction: 18  
Perceived age prediction: 20  
AntiAgeist score: 6,5  
PIMPL score: 1,1  
RYNKL score: 2  
MADIS score: 96  
Symmetry Master score: 1,3



**Evgeniya Miruk**

Age: 29  
Real age prediction: 23  
Perceived age prediction: 23  
AntiAgeist score: 9  
PIMPL score: 1,2  
RYNKL score: 3  
MADIS score: 97  
Symmetry Master score: 5,2

Image [URL](#)  
Cf. this [URL](#)

# Amazon Prime Free Same-Day Delivery by zip code (data driven by demand)

**Atlanta**



**Boston**



**Chicago**



**Dallas**



**New York City**



**Washington, D.C.**

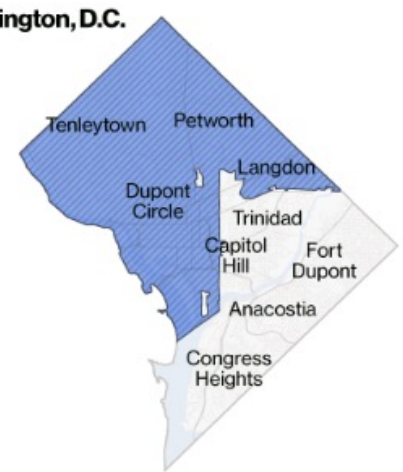


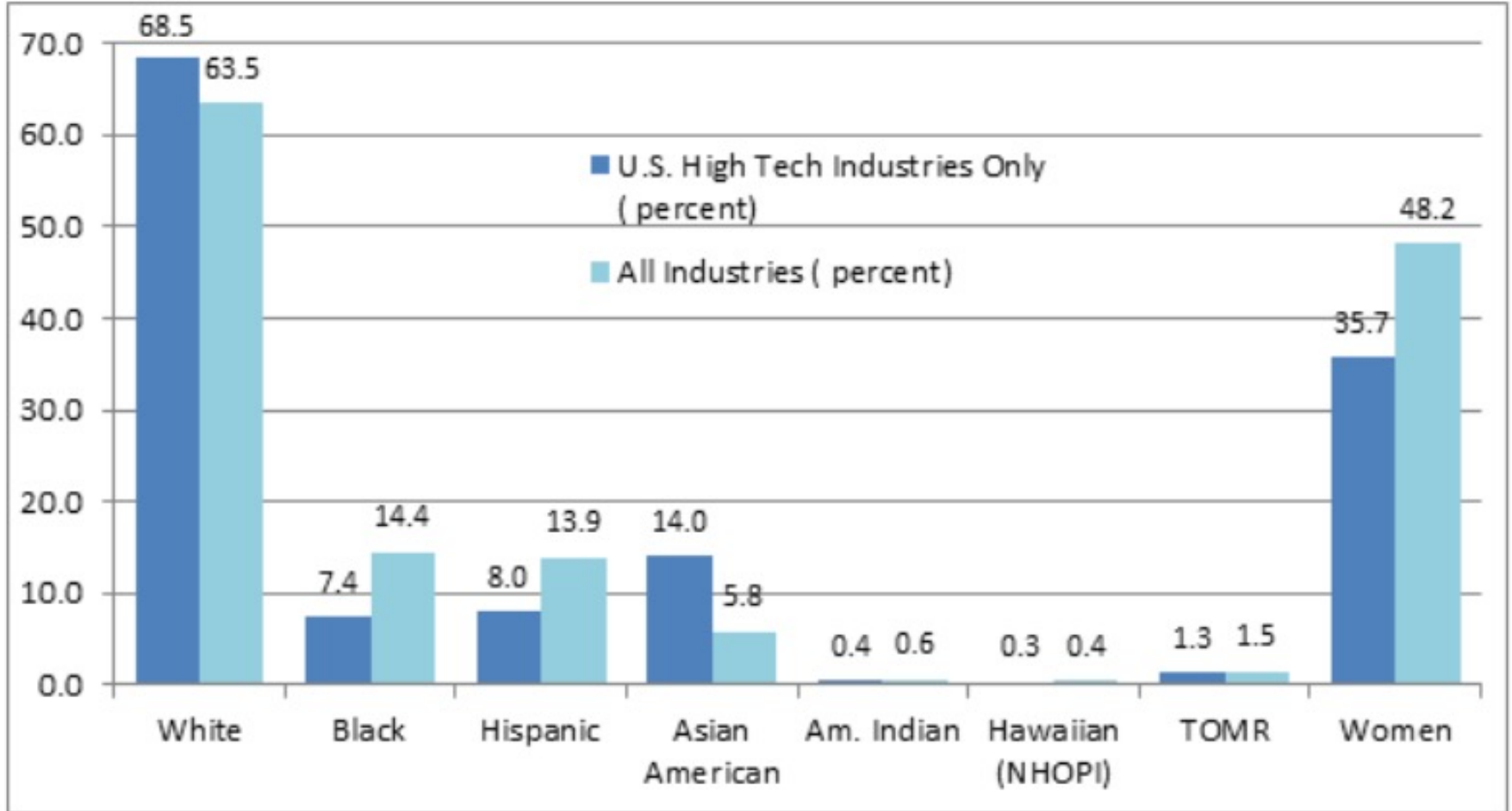
Image [URL](#)

GIVE ME A MOMENT TO FIND  
UNBIASED DATA THAT  
SUPPORTS CALLING YOU  
AND YOUR IDEA STUPID.



SUBJECTIVE BIAS;  
OBJECTIVE LIMITS

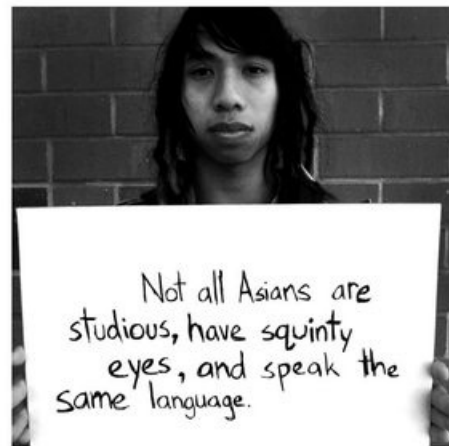
**INDUSTRY PARTICIPATION BY GENDER SEX AND RACE GROUPS  
HIGH TECH VS. ALL PRIVATE INDUSTRIES**



**Representation requires presence**

Graph: <https://www.eeoc.gov/special-report/diversity-high-tech>

Cf. <https://www.ft.com/content/d61e8ff2-48a1-11e8-8c77-ff51caedcde6>



EPISTEMIC  
INJUSTICE  
cf. Fricker  
(2007)

Image [URL](#)



Image: Dawn Endico

Situational knowledge and embodied cognition

Eye is an "Active perceptual systems" so no "unmediated" account (Haraway, 2009, p. 583)

"Just as for the rest of us, what scientists believe or say they do and what they really do have a very loose fit" (Ibid, p.576)

## (Haraway (2009))

---

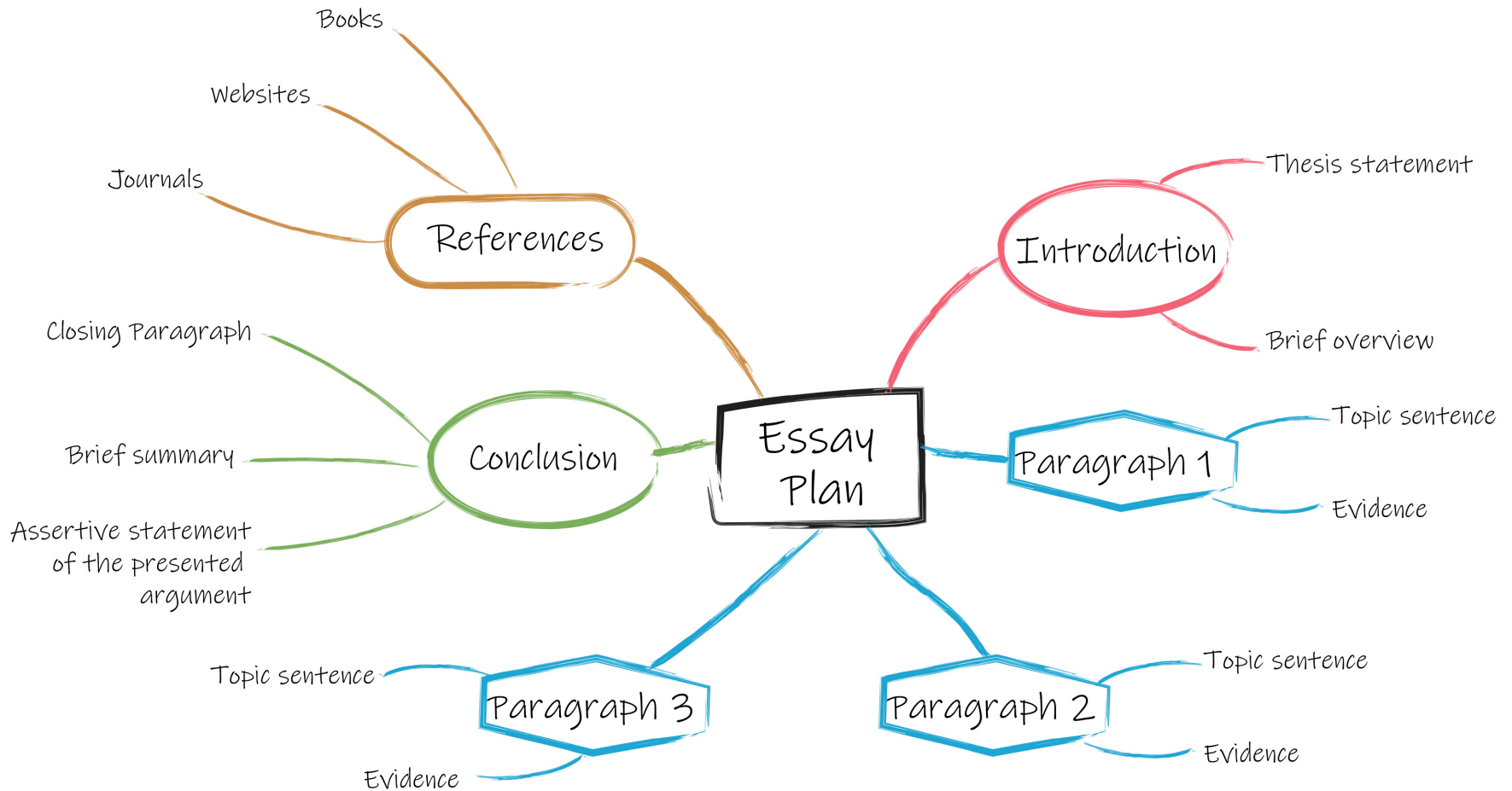
- Disembodied scientific 'objectivity' vs. embodied, i.e. objectivity is particular and specific (p. 582)
- "radical historical specificity (p. 578), i.e. standpoint theories, partial perspectives, or "a view from somewhere" (p. 590) ≠ relativism, or "a way of being nowhere while claiming to be everywhere equally" (p. 584)
- "partial perspective [...] promises objective vision" (p. 583), i.e. recognising one's necessary subjectivity
- Knowing depends on being, and being is "contingent" (p. 585)



# Additional source

- Moravec, Hans (1988). *Mind children: The future of robot and human intelligence*. Cambridge, MA: Harvard University Press.

# Seminar: Diary planning



# What we expect

- Research
- Thought
- Critical skills
- Academic writing
- Arguments
- Evidence

the future, constitute an increasingly large proportion of any museum's potential public. The majority of this generation are not being served at all in the blanket gloom that pervades most galleries and museums. The museum case of the future, too, could be intelligent, and be able to monitor the amount of light exposure each object receives. It could record, too, how many visitors look at it and for how long. If visitors regularly turn away at a particular point, it may be that there is a fault in the storytelling. By this means, unsuccessful displays could be earmarked for change or removal, while much-used displays could be given an extended life. Headsets could be designed so that the visitor can make choices as to how he or she goes around the museum. They will be able to keep track of where you are, and guide you to the café, for example, if you want a break, and then back to where you were to continue your journey through the displays. Most valuably your personal headset will be able to talk to your computer after your visit and record what you were most interested in, or at least what you spent most time looking at (you could be surprised), and then let you know where you can find out more about these subjects and see more examples in other museums at home and abroad. In time this technology will enable you to explore the displays in advance on the museum's database, choose what you want to see, and be taken to it when you arrive.

WHO HAS THIS KIND OF TIME, OR FORETHOUGHT??

Let us imagine what a visit to the British Museum could be like in, say, 2012. It is about ten o'clock at night. Jill, a 30-year-old computer programmer, Jake, her 16-year-old nephew, Sophie, her 9-year-old niece, and their great-uncle David are passing the British Museum on their way back from a show. The last visitors are leaving and the guard is closing the gates. Sophie peers through the railings and sees, amongst a group of statues standing in the otherwise eerily empty courtyard, a figure with a headdress full of birds' feathers that looks like one of her favourite characters in the latest Star Wars trilogy. Jill notices a poster about a show on the history of computer imaging, and David spots that the entrance is free. He had last been to the museum over 50 years ago, he thinks, but the others have never visited before. On their way home on the tube, they decide to make a visit the very next day, as it is half-term. David needs a bit of persuading because his eyes are not as good as they were and he fears he may not be able to see anything. Even the silent Jake says he will come. He has nothing better to do.

The next day, Sophie's statue turns out to be a Highland Chief from Papua New Guinea. His headdress is decorated with feathers taken from the tails of birds of paradise. Jill wants her photograph taken standing next to a statue of

PUT A CHIP  
IN IT!  
AND  
VISITOR  
PRIVACY  
COULD BE  
IMPROVED.

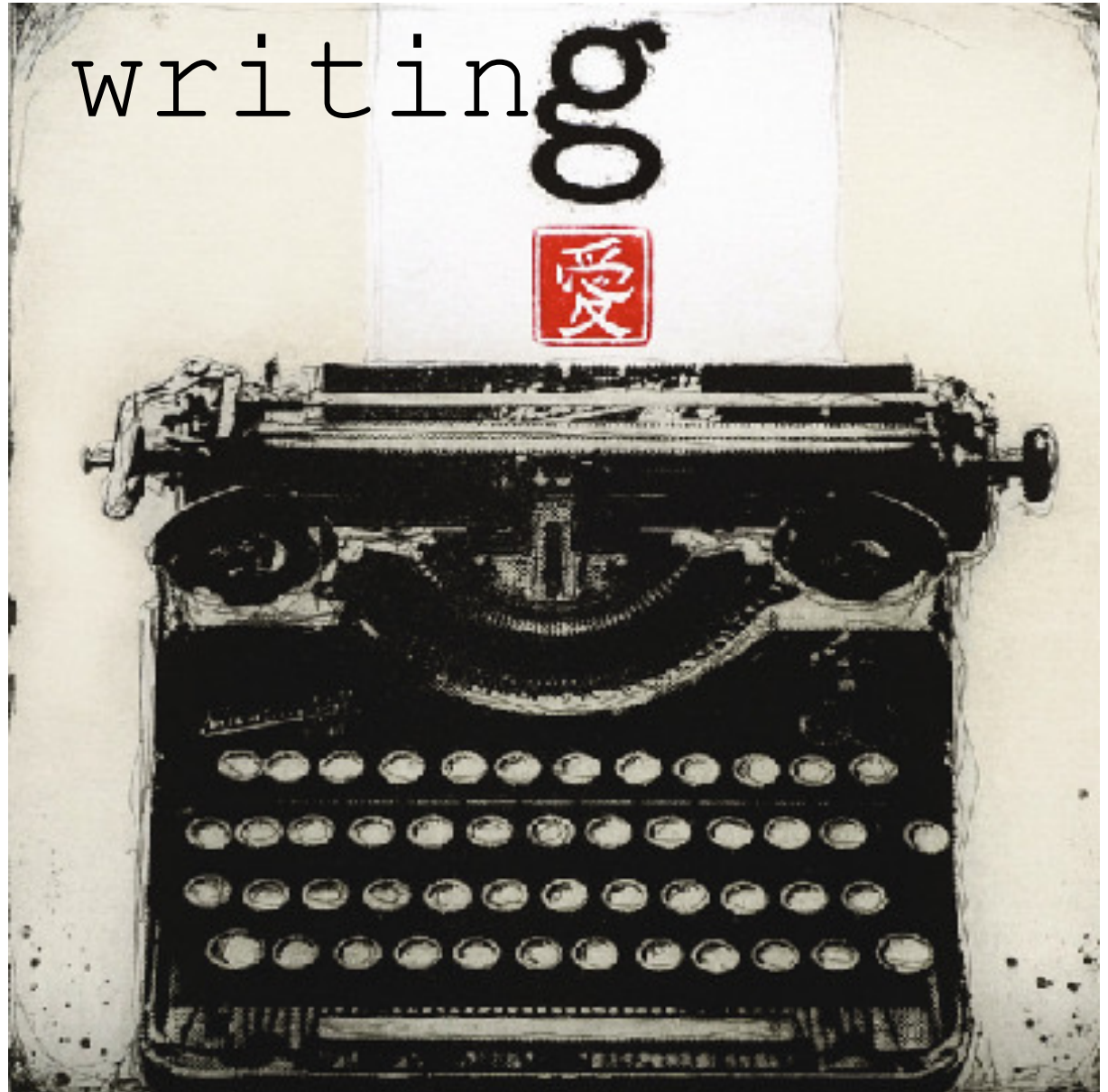
HAHAHA

- Ground-breaking research
- Lots of description
- Grand or rhetorical questions
- That you read or know *everything*
  - *Read enough to sustain/develop your argument*



What we  
don't  
expect

# Approaches to writing



On opinions..



# Your first diary entry

- What will it cover? (+ what relevant things will be left out and why?)
- Keep description to minimum necessary and focus on analysis (check assessment criteria on Canvas to see why)
- Introduce & define specific or technical terms (cite a philosophical encyclopaedia or similar, but not a dictionary)
- Explain the issue with reference to relevant evidence and references (don't rely on just the PPTs)
- *Don't: state the obvious; be pretentious or grandiose; make excuses or start with failures*

# Keep it clear & simple

- One main idea per paragraph
- Stay on topic
- Consider counterarguments
- Don't wait to start writing
- Proofread and edit (and repeat)



# Link paragraphs

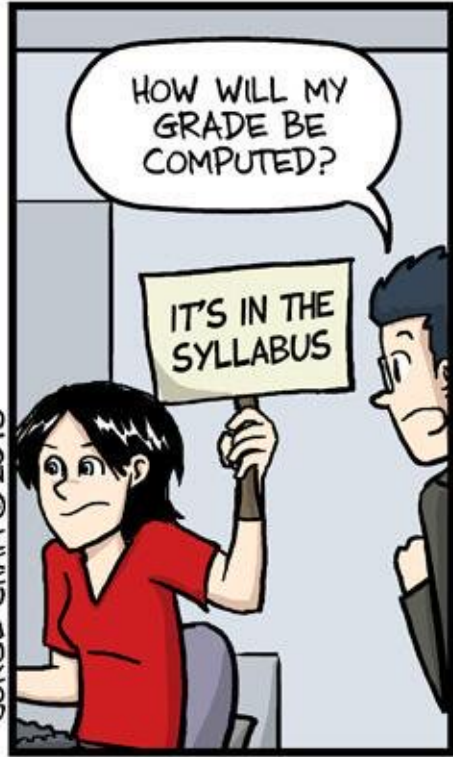
- Link your paragraphs (don't jump without explanation), e.g.:
- **Sequential:** To begin with → secondly → next → a further point
- **Expansion:** Furthermore → in addition → as well as
- **Comparison:** Similarly → in the same way
- **Contrast:** Instead → on the contrary

# Ending a diary entry

- Briefly sum up your findings. Try to use new / different words (avoid repetition)
- End with more than just a summary (description), i.e. try to come to some conclusion(s), i.e. what was the point of the reflection?
- Don't introduce new evidence, topics or ideas

# Start here:

- What will you look at and why?
- Are your sources reliable and up to date?
- How will you cover as much as you need without trying to cover too much?
- What are the advantages and disadvantages of the approach you are taking?
- What biases might your research betray? i.e. are you looking at other views, or only those that support your perspective?



JORGE CHAM © 2013

# IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

[WWW.PHDCOMICS.COM](http://WWW.PHDCOMICS.COM)

Press Conference on 'the war on terror' by former US Secretary of Defence, Donald Rumsfeld, 6 June 2002. Source



“Now what is the message there? The message is that there are no ‘knowns.’ There are things we know that we know. There are known unknowns. That is to say there are things that we now know we don't know. But there are also unknown unknowns. There are things we don't know we don't know.”