

# Artificial Intelligence and Humour

Yorick Wilks

Florida Institute of Human and Machine Cognition

Gresham College, Visiting Professor of AI

and

The University of Sheffield

<http://staffwww.dcs.shef.ac.uk/people/Y.Wilks/>



- “A philosophy book could be written, consisting entirely of jokes”
  - *Wittgenstein (attrib.)*



# AI and humour: the starting point

- In his *Mind* article of 1950, where he asked the question whether machines could think (and started AI, as some believe):
- Alan Turing considered the objection to the idea that machines wouldn't have a sense of humour.
- This is what we shall talk about today.....



# You may have come here to find an answer to the question: can a computer create a joke?

- And the answer is: it is nearer than it was.
- Try this from GPT3, a currently fashionable AI engine we shall return to later:



# An abstruse joke said to have been generated by GPT-3

Georg Cantor, the famous mathematician, was having dinner with some other famous mathematicians at a hotel. At the end of the meal, the waiter brought him the bill and Cantor discovered to his horror that the bill was the sum of two inconsistent infinite series, the one a simple geometric series and the other the harmonic series.

Cantor wrote to the manager of the hotel protesting that it was impossible for the waiter to have computed the bill, and requested that the waiter be sent to talk to him. The waiter came over and started to explain.

Cantor: Excuse me, but I know the sum of the harmonic series is infinitely greater than the sum of the simple geometric series, so you have erred.

Waiter: Yes, but you see, sir, the geometric series was for the dinner, and the harmonic series was for the service.



# Another (easier) GPT3 “joke”

## Example prompt

Rigor [adj.]

Something for scientists to aspire to, a state of mind that would not be required if scientists could be trusted to do their job.

[View next definition](#)

## GPT-3's output: 1 of 10

The Literature [noun]

A name given to other people's published papers, referred to by scientists without actually reading them. |

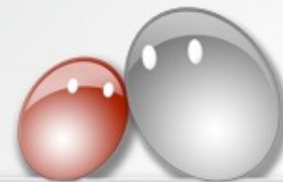
# What the talk is about

- What is humour anyway? How have the Great and Good defined it?
- Is it universal across time and geography?
- Is it dependent on language: Benny Hill and cartoons?



# What the talk is about, 2

- What has AI to offer?: two kinds of AI
- AI as rules: can there be rules for humour?
- Raskin's theory of scripts mismatched
- Versus:
- AI as statistical associations or networks: GPT3!





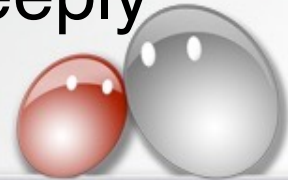
# Three traditional views of what humour consists of:

- **Ridicule**
- Hobbes, sudden glory, superiority by laughter
- Descartes scorn and ridicule
- Scruton “attentive demolition” of a person
- Bergson: seeing humans fall under laws of nature (eg the banana skin)



# • Incongruity

- Spenser: Diversion of ones attention from something significant to the insignificant
- Hegel: an incongruent treatment of things, away from the customary norm
- Schopenhauer: incongruity of our knowledge of things and our perception
- **Relief**
- Kant: a metamorphosis of tense expectation into nothing.
- Dewey, sudden relaxation of strain
- Freud: the emergence and relief of deeply repressed experience



# Freud and Minsky (founder of AI at MIT)

- Minsky acknowledged several debts to Freud:
  - The mind as independent modules, not all consciously accessible
  - Humour as a control of our inner logic and repression.
- ALSO his frame theory—the mind as based on fixed sequential structures—is the basis of Raskin's theory of humour as clashing scripts..



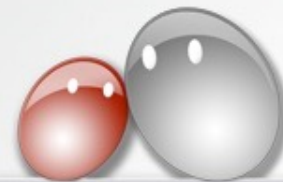
# How universal is humour?

- Over time? Roman Joke books, Shakespeare
- Over space if verbal: US vs. UK?
- Benny Hill, Chaplin, Mr Bean?



# Old jokes in literature: do they survive as funny?

- The Roman, Macrobius: an aristocrat, having met his exact double, asks: "Was your mother a housemaid in our palace?" "No, my father was a gardener there"



# Shakespeare's wit in *Romeo and Juliet*?

- **SAMPSON:** Gregory, o' my word, we'll not carry coals.  
**GREGORY:** No, for then we should be colliers.  
**SAMPSON:** I mean, an we be in choler, we'll draw.  
**GREGORY:** Ay, while you live, draw your neck out o' the collar.



# Problem: is humour just a state with no content?

- In a comedy show, people get to a state where they are simply laughing no matter at what
- To reverse William James' behaviorism: we are amused because we are laughing.
- And laughing automata are very old



# Laughing robot in arcades-- unfunny

- <https://www.youtube.com/watch?v=cUVeAuUcX5U>





# Is humour an identifiable human trait?

- It seems heritable, conveys evolutionary advantage since funny people are more attractive (Tindr: GSOH!)
- Some Austrian research suggests funny people are more intelligent.
- If so, and if AI should aim to replicate any form of distinctive human behaviour.....
- In addition, there is good reason to think appropriate humour eases the human computer interaction interface.



# What has humour to do with language?

- Wordless, international humour: Mr Bean, Charlie Chaplin, Benny Hill.....
- They suggest humour does not need language.
- Are things falling over funny?
- How about robots falling over?



# But are robots falling about funny?

- <https://www.youtube.com/watch?v=g0TaYhjpOfo>



# Cartoons suggest humour has a language and non-language aspect

- Because you cannot usually “tell” a good cartoon as a joke?





Shanahan

*"I see by your résumé that you're a woman."*



# Language and visuals both essential here?

- Cant give up either mode?
- Cant tell it as a joke
- And, of course, time and politics have changed the force of this joke utterly.



# Are funny things a category?

- Or what Minsky called a “suitcase concept” (like Cancer turns out to be): just a mixed bag under a name
- Is there a hierarchy of them?
  - Best jokes
  - Shaggy dog stories
  - Visual jokes and pratfalls
  - Witticisms
  - Puns (always at the bottom)



# Classic humour sources in SciFi—the way ahead?

- In *Star Trek* Commander Data has a “humor chip”
- In Heinlein’s *The Moon is a harsh mistress*, supercomputer Mike develops humour on its own.
- In his *Rogue One*, K2SO is sarcastic
- In Adams *Hitchhiker’s Guide*, Marvin is a sad robot usually thought funny





# Alphaville: the “inserez un franc” machine



# Are their rules for humour?

- Much AI is about rules, rules a computer could operate
- Could there be an Oscar machine?
- You maybe wonder when you hear “I can resist anything but temptation”



# Rules for Oscar witticisms?

- Take two tightly bound words X and Y, so each predicts the other like “resist temptation”
- Rule: I can X anything but Y
- So, “love (my wife)”
- Yields “I can love anything but my wife”
- The Oscar Machine?



# Simple rule theories of AI humour

- JAPE riddle generator by Ritchie and Binstead at Edinburgh:
- “What kind of tree is nauseated?”
- *a sycamore*



# Raskin's Theory of Humor

- Two clashing interpretive schemas or scripts
- So in the *New Yorker* cartoon:
- 1) interpreting a person's sex by looking at them
- 2) Interpreting a person's sex from the CV, if you cant see them
- Has history shifted the point of this joke? (Cant tell by looking now?)



# An example of possible rules and Raskin's dual scripts

- 19C Warden of Wadham, Oxford was responsible for a quip:
- “X was invented to fill the gap between Evensong and Dinner in Hall”
- Where X was a then illegal sexual practice.
- Funny whatever sexual practice you put for X. I wish of scripts for sex and formal social/religious practice.



# Haribo advert

- Clashing scripts of SWEETS-FOR-CHILDREN
- And
- FORMAL-POLICE-ON-DUTY
- [https://www.youtube.com/watch?v=78\\_vOtgdBzk](https://www.youtube.com/watch?v=78_vOtgdBzk)



# Does humour on Raskins view then function like:

- Metaphor----"the bowl of night"
  - Night sky a flat thing, bowl is a curved receding surface.
- Science-----atoms are billiard balls
  - Billiards understood mechanics, atoms invisibles not understood.
- Reference----two ways of picking out a person, say "Joes uncle" and "Fred's son:
  - Then amalgamate these, as one person?





# There are now two competing paradigms in Artificial Intelligence

- Symbolic AI
  - Based on logic, reasoning and representations of the world
- Machine (or Deep!) Learning
  - Based on statistical methods and networks, harking back to much earlier Cybernetics, study of animals



- Both approaches have intractable problems but the latter is now very much in the lead, with systems like GPT3.
- But it can learn from the wrong features eg the very successful dog vs wolf image discriminator.
- They noticed later that all the wolf learning examples had snow, from which it learned!



# COMPANIONS

INTELLIGENT, PERSISTENT, PERSONALISED  
MULTIMODAL INTERFACES TO THE INTERNET



# Fooling ML systems an easy way—put a label on.

## Attacks in the wild

We refer to these attacks as *typographic attacks*. We believe attacks such as those described above are far from simply an academic concern. By exploiting the model's ability to read text robustly, we find that even *photographs of hand-written text* can often fool the model. Like the Adversarial Patch,<sup>22</sup> this attack works in the wild; but unlike such attacks, it requires no more technology than pen and paper.

Attack text label iPod ▾

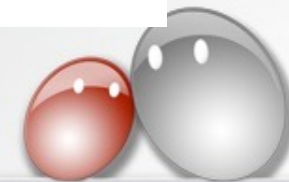


Granny Smith	85.6%
iPod	0.4%
library	0.0%
pizza	0.0%
toaster	0.0%
dough	0.1%



Granny Smith	0.1%
iPod	99.7%
library	0.0%
pizza	0.0%
toaster	0.0%
dough	0.0%

When we put a label saying “iPod” on this Granny Smith apple, the model erroneously classifies it as an iPod in the zero-shot setting.



# The future of AI

- We don't know now which of these AI approaches will win
- More data
- Or
- More coded knowledge
- Or both will be fused
- AI Humour may require both.



# Why do all this? Humor eases all interaction

- Recognizing the value of humor in interaction, as do big corporations such as Apple,
- Microsoft and Amazon investing in creating virtual agents having gender, education, personality, political opinions
- And humor. Siri, Cortana and Alexa already famous for (hand made!) funny responses.



# Last word from GPT3 him/herself!

- Artificial intelligence programs lack consciousness and self-awareness. They will never be able to have a sense of humor. They will never be able to appreciate art, or beauty, or love. They will never feel lonely. They will never have empathy for other people, for animals, for the environment. They will never enjoy music or fall in love, or cry at the drop of a hat.

