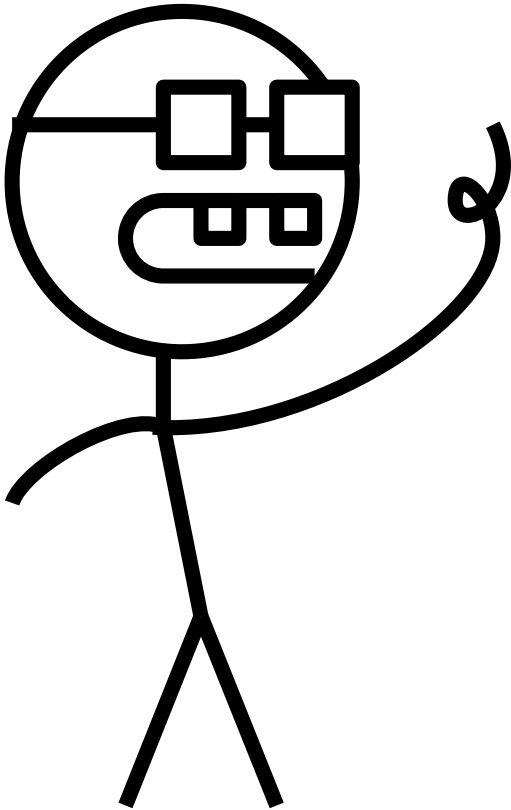


# Charlie's Grand Challenge

# A breif history of snobbery

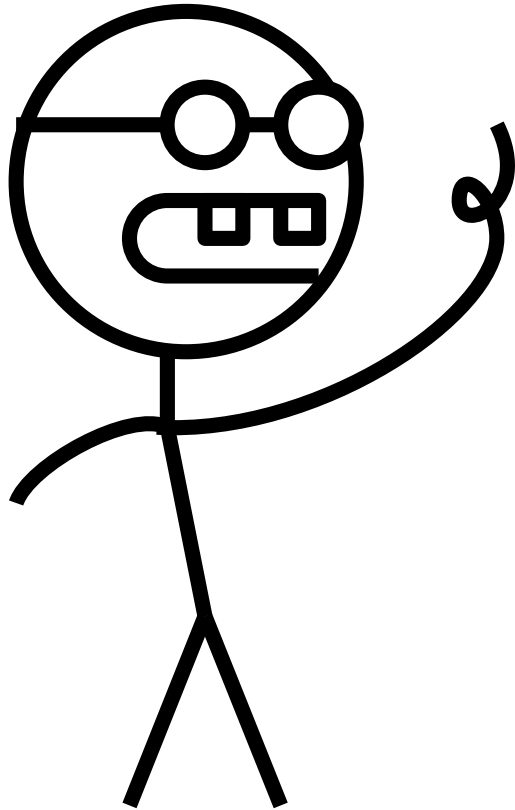
# A breif history of snobbery

**Actually...**

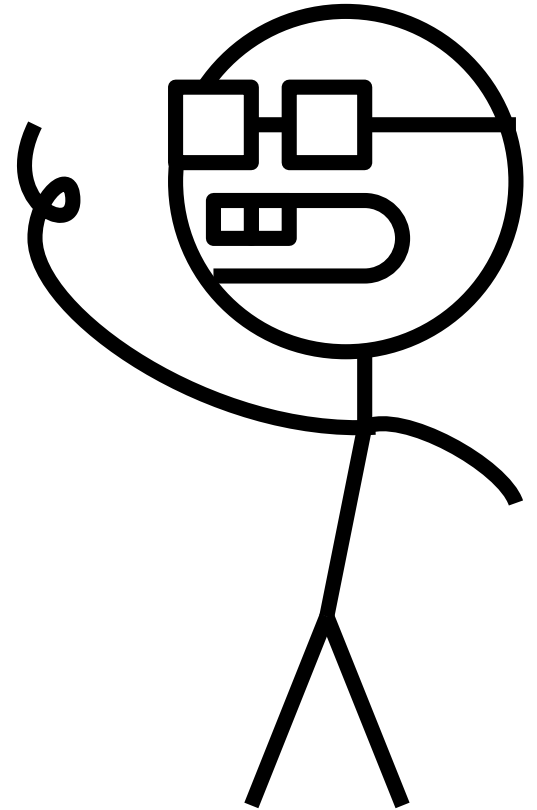


What is a snobbery?

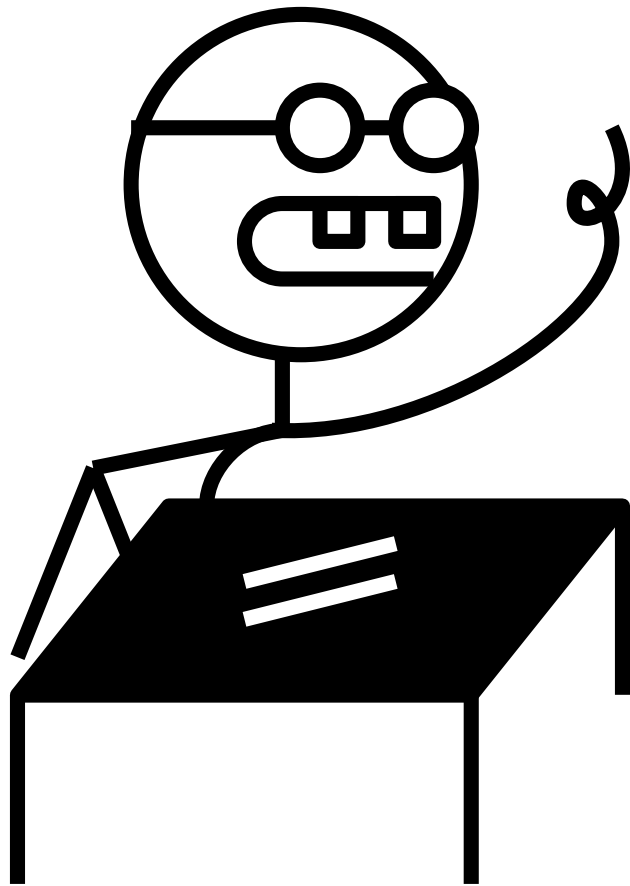
**Apple makes the  
best computers.**



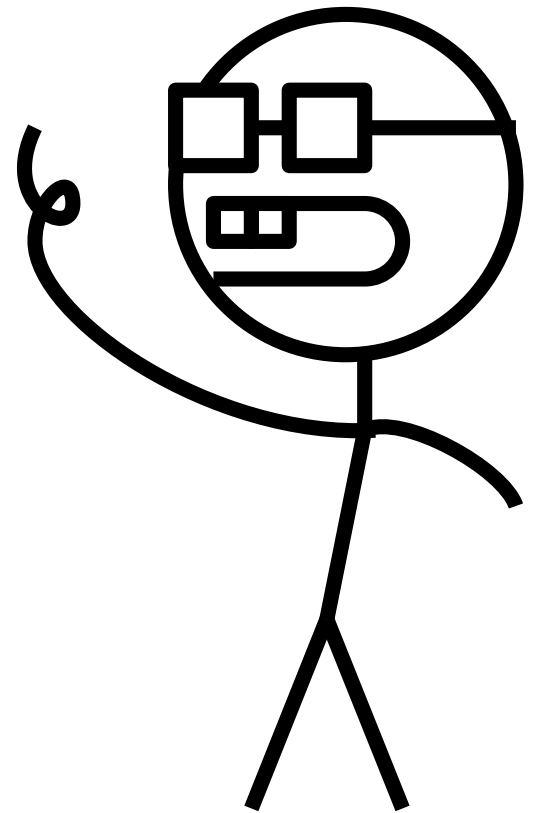
**Actually you're  
wrong but I wouldn't  
expect a Mac user  
to understand**



**Actually this is  
Fairtrade cocaine!**

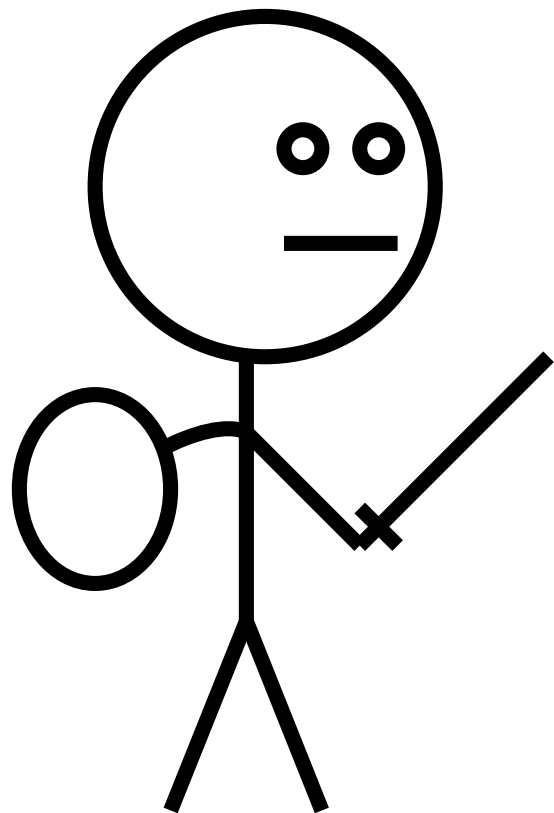


**HA!  
But is it organic?**

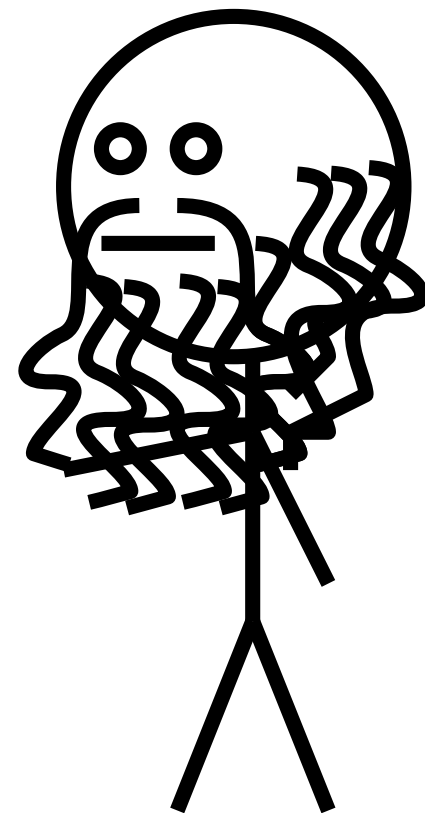


Time before snobbery

**Being a soldier is a noble profession**



**But why?**





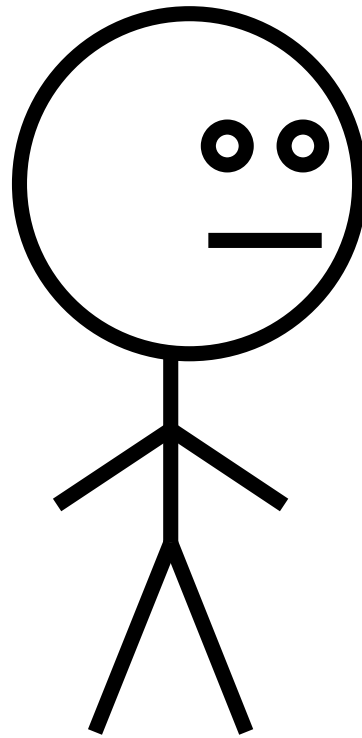
# For

**Murdering people  
is wrong**

**Wars have to be for  
a reason and not  
just to demonstrate  
courage**

**Pursuit of glory is  
not a selfless act**

# ?



# Against

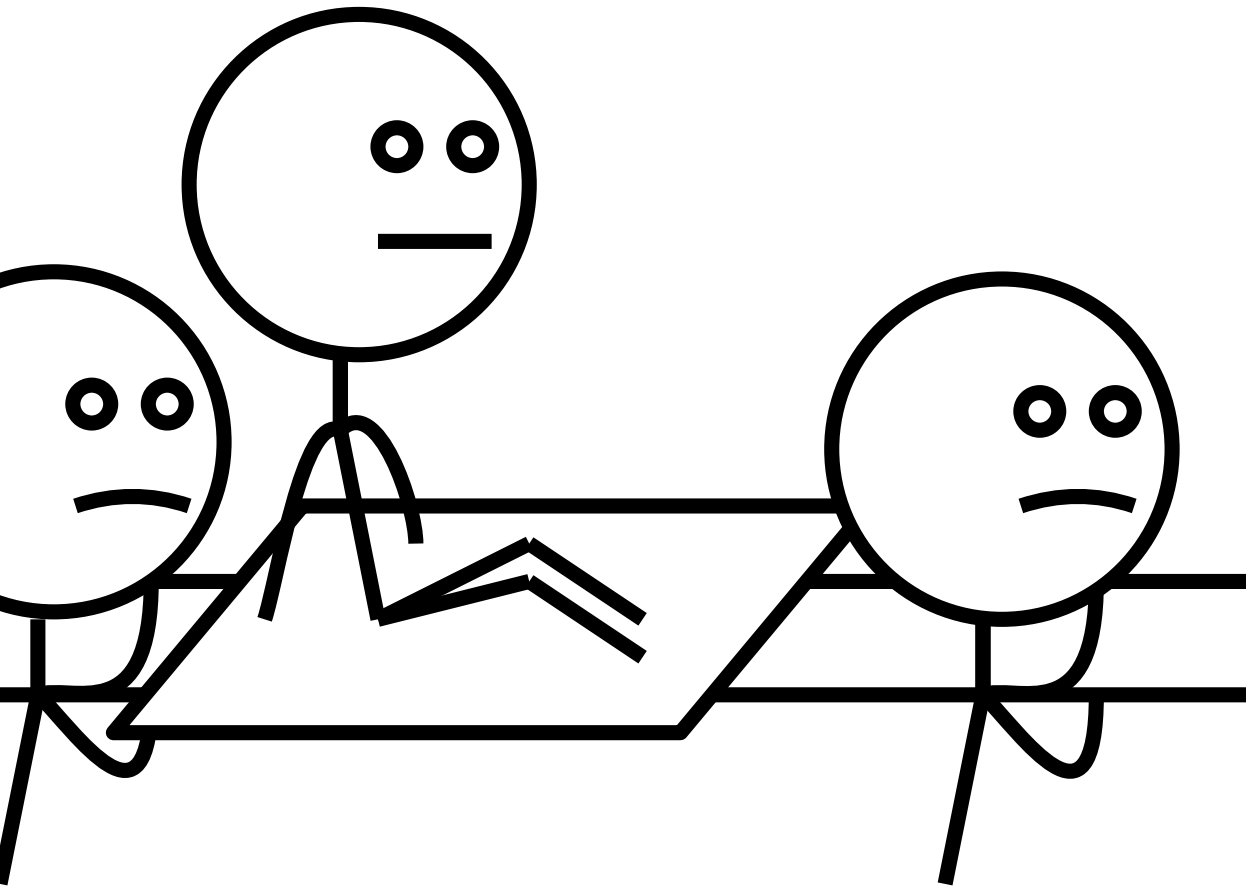
**This person does  
not seem to have  
common sense**

**But I like it the  
way things are**

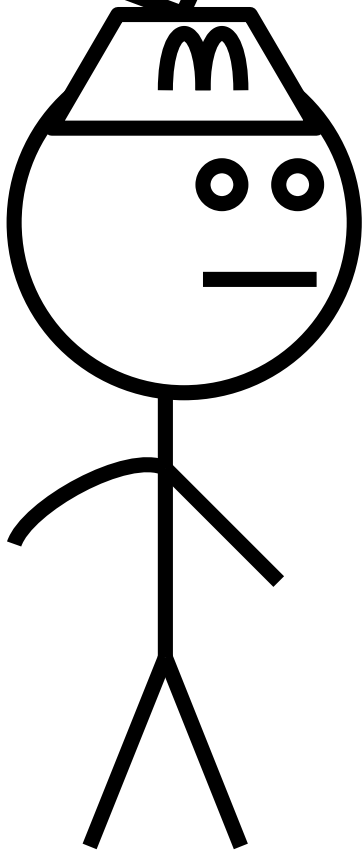
**Looks like he  
hasn't had a  
wash for weeks**

**Owning slaves is  
acceptable**

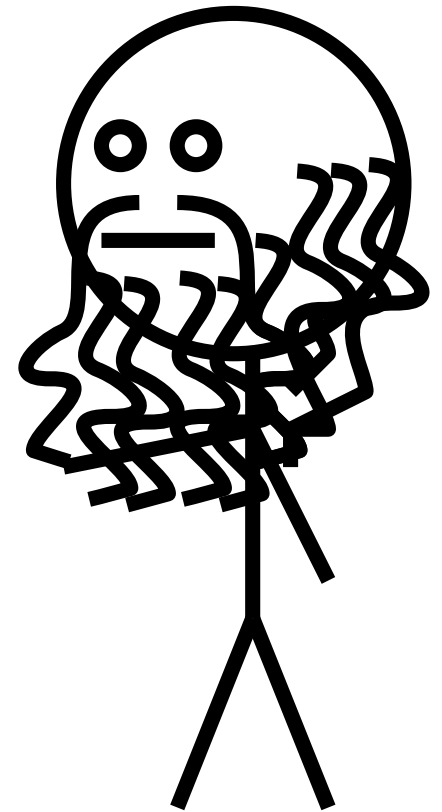
**But why?**



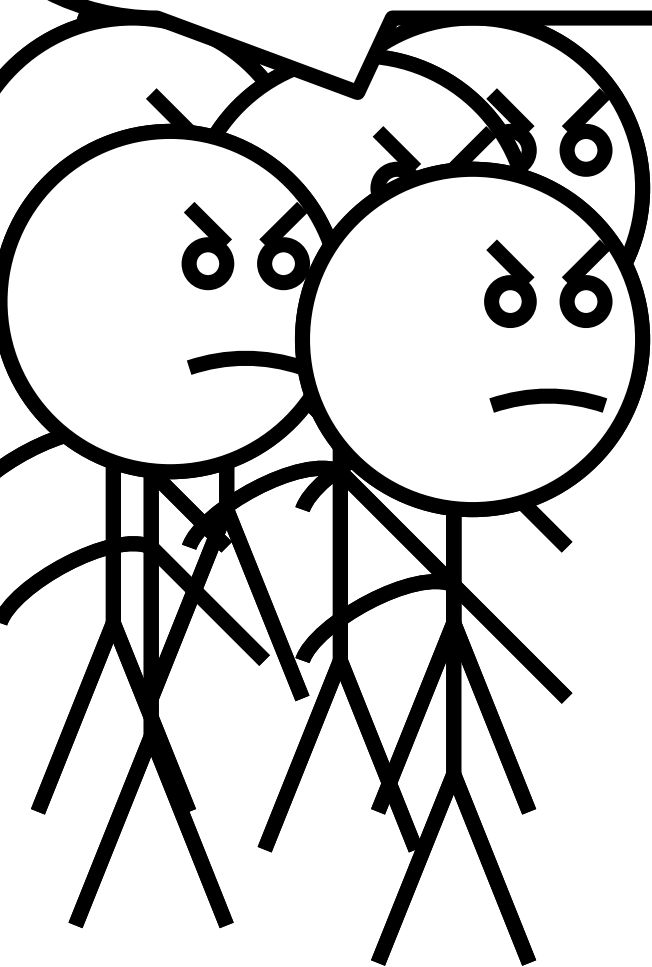
**Would you like fries  
with that?**



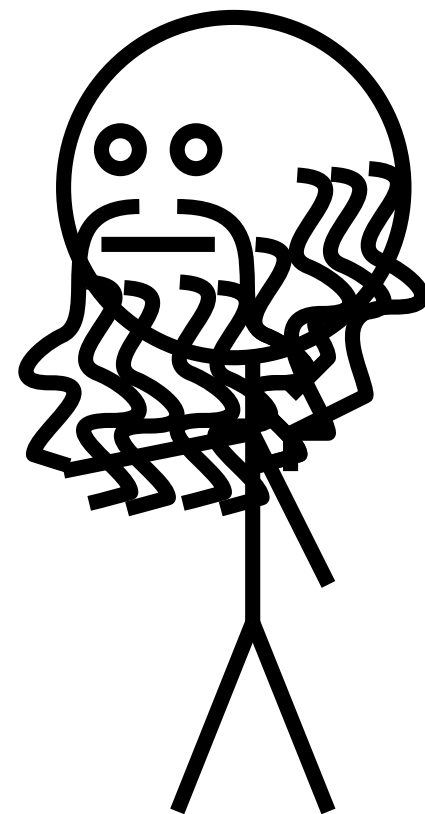
**But why?**



**Lets shut him up**



**But why?**



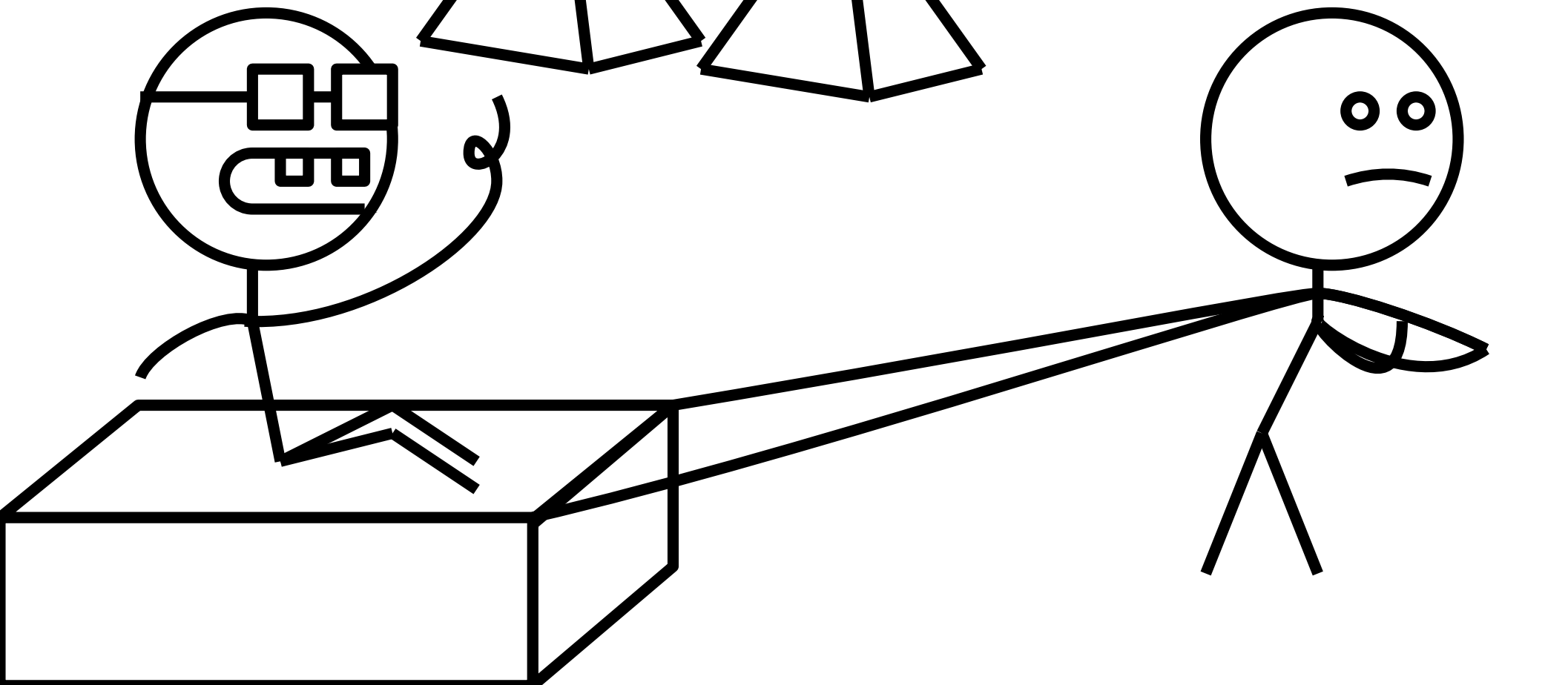
**Stop whining!**



# Origins of snobbery

**This is the the natural  
order of things**

**But why?**



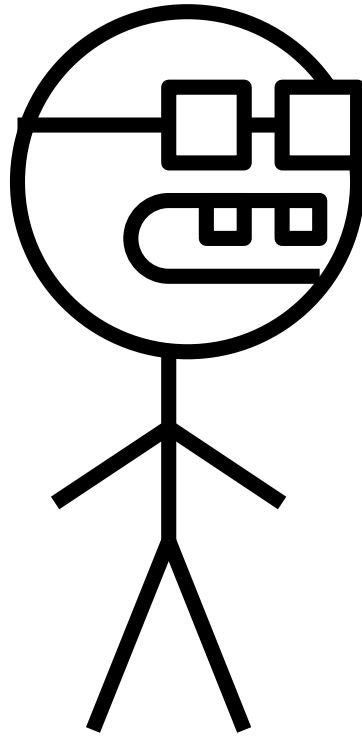
# For

~~Murdering people  
is wrong~~

~~Wars have to be for  
a reason and not  
just to demonstrate  
courage~~

~~Pursuit of glory is  
not a selfless act~~

# ?



# Against

This person does  
not seem to have  
common sense



Common sense is the collection  
of prejudices acquired by age  
eighteen

Albert Einstein

**Cats have 4 legs**

**Sky is blue**

**Fire is hot**

# **Common Sense**

**I am fantastic**

**Slaves are stupid**

**Indent with tabs**

**My iPhone loves me**



```
graph TD; A[ ] --> B{Someone says "fire is not hot"}; B --> C[Start questioning all things you assumed were common sense.]; B --> D[Obviously this person knows nothing. Ignore and hate them.];
```

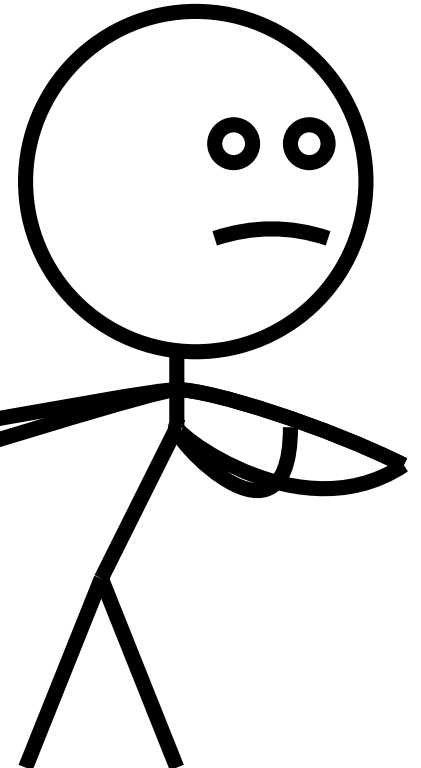
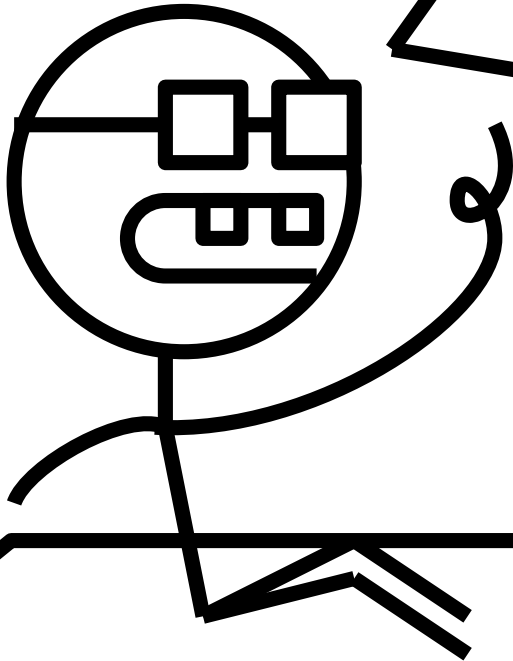
**Someone says  
"fire is not hot"**

**Start questioning  
all things you  
assumed were  
common sense.**

**Obviously this  
person knows  
nothing. Ignore  
and hate them.**

**Your inability to understand the natural order is why**

**Grumble grumble...**



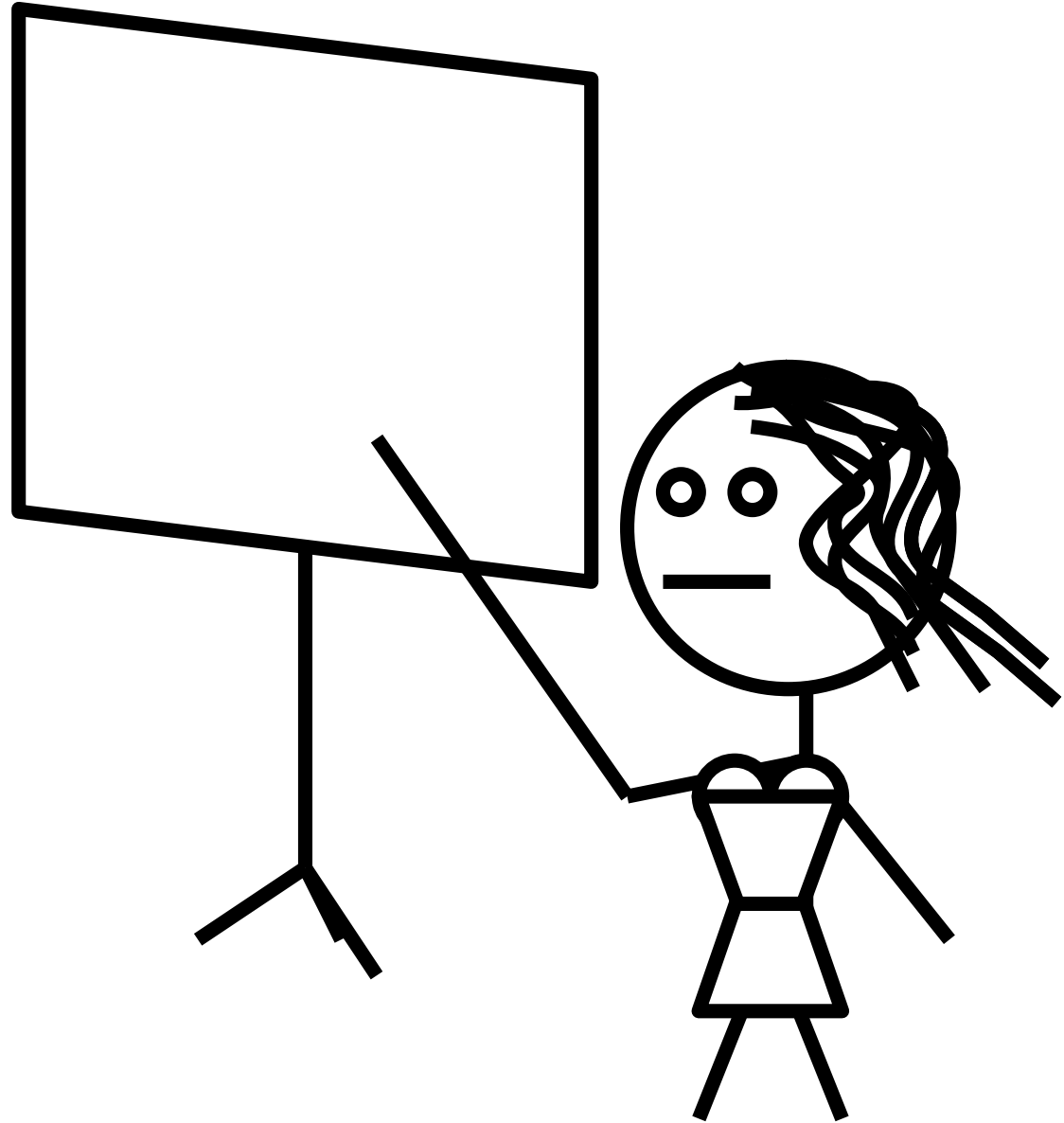
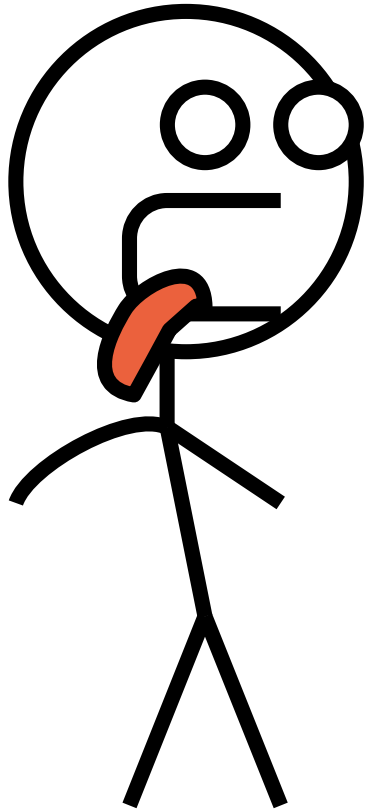
The wisdom of a learned man  
cometh by opportunity of leisure:  
and he that hath little business  
shall become wise.

How can he get wisdom that  
holdeth the plough, and that  
glorieth in the goad, that driveth  
oxen, and is occupied in their  
labours, and whose talk is of  
bullocks?

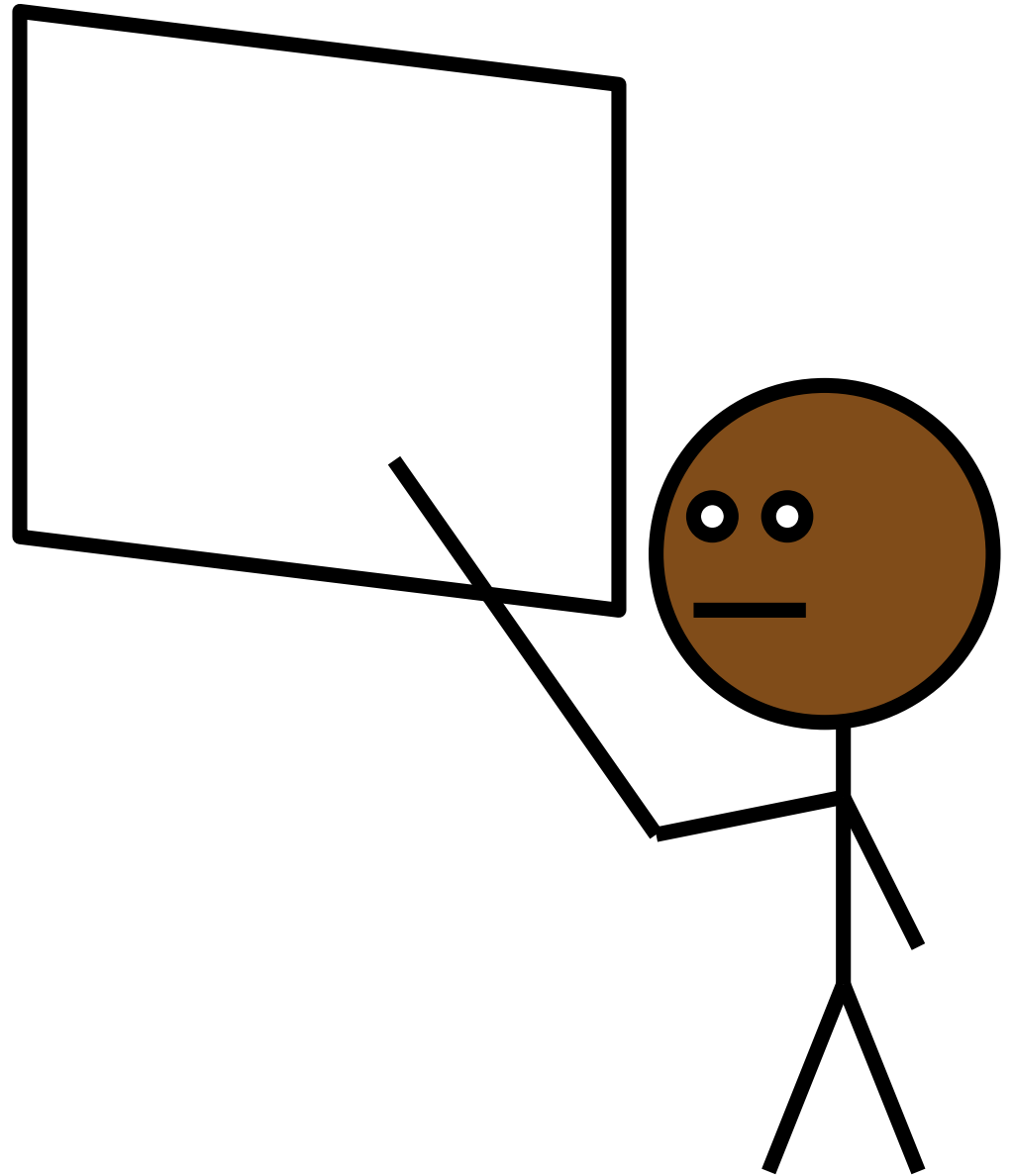
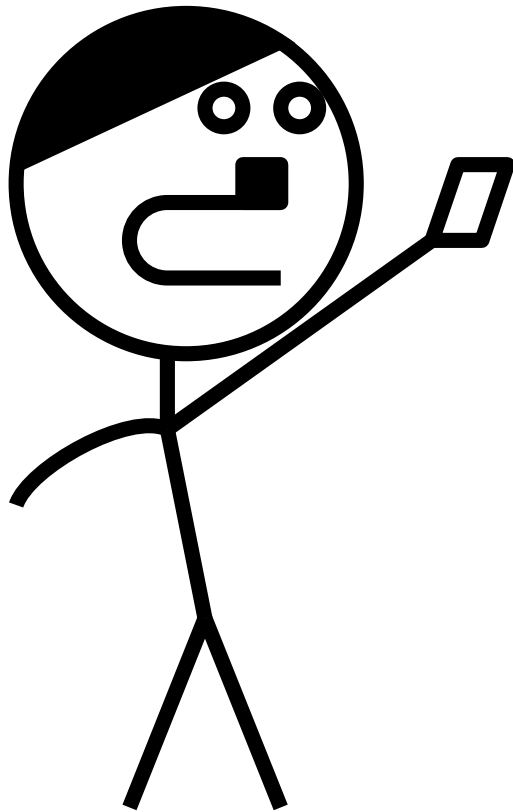
Sirach [38:24]

Is it acceptable?

**What is she doing  
out of the kitchen?  
She does have a  
cracking pair though**

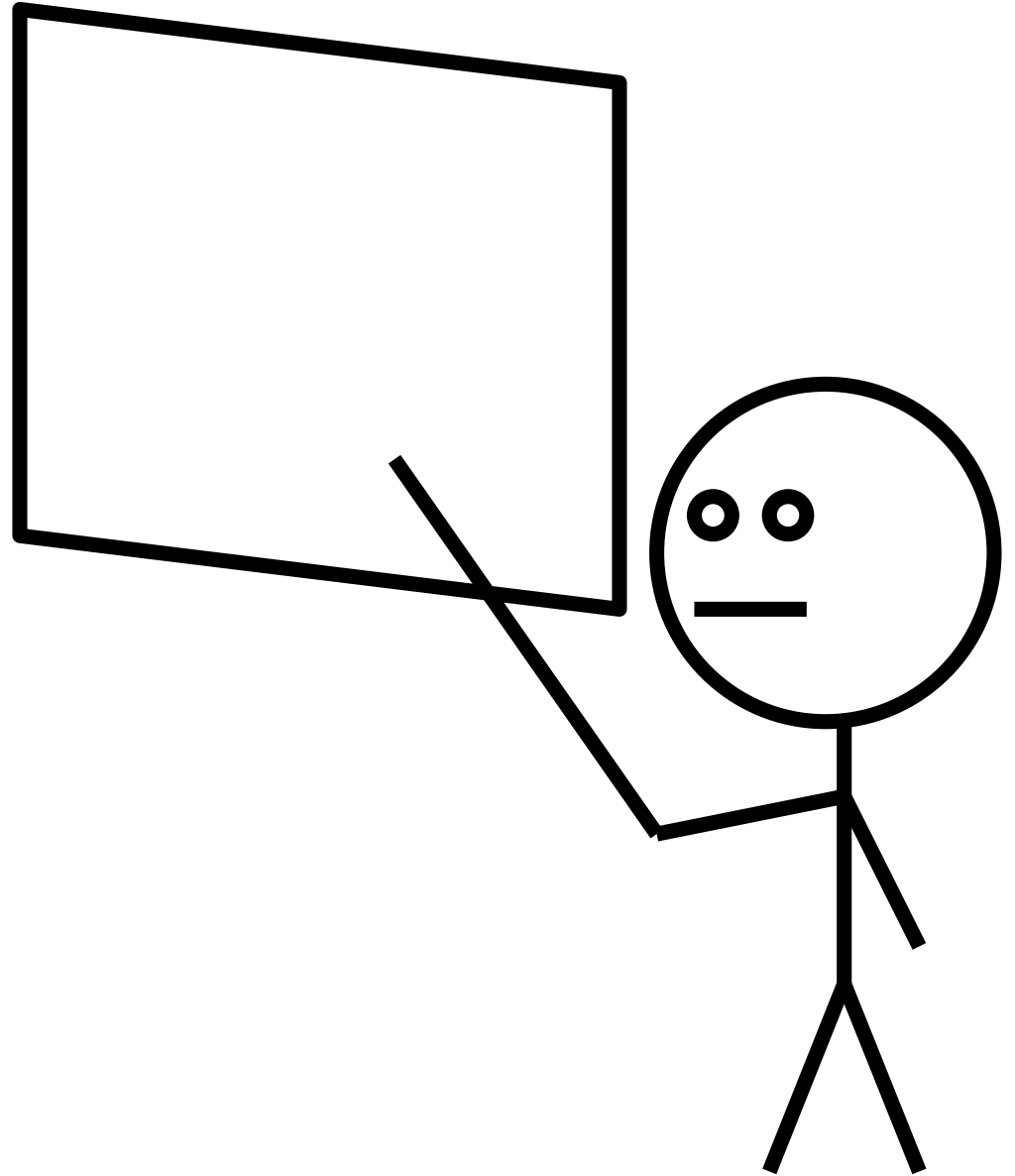
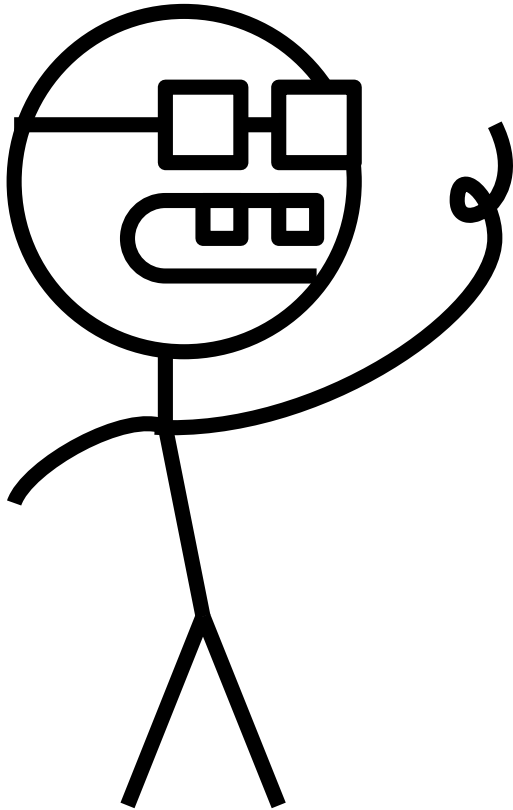


**I dismissed this talk  
due to the colour of  
the presenter's skin**

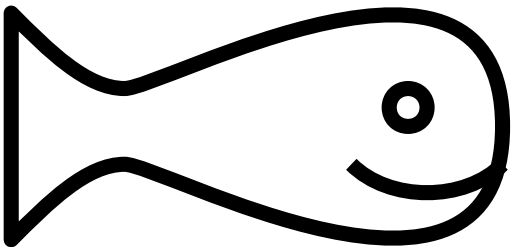


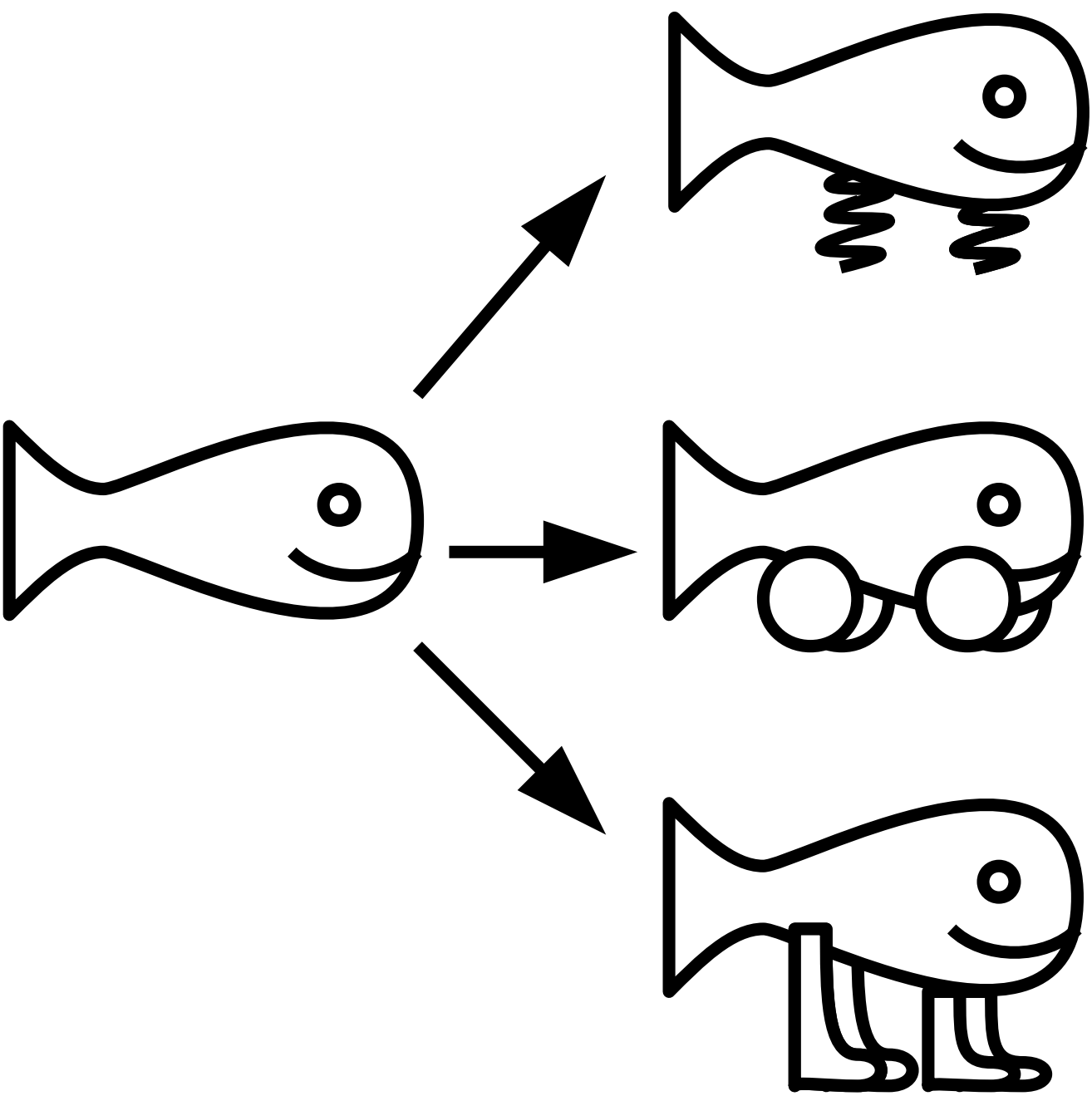


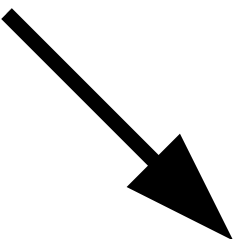
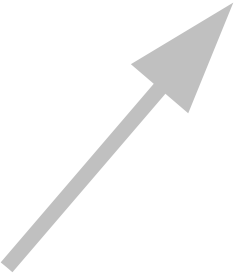
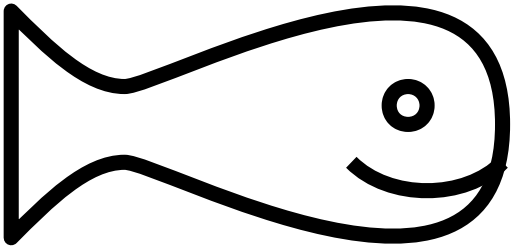
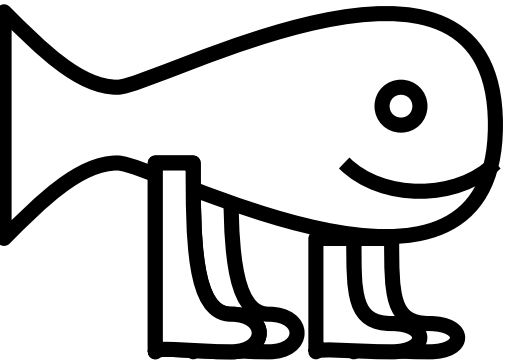
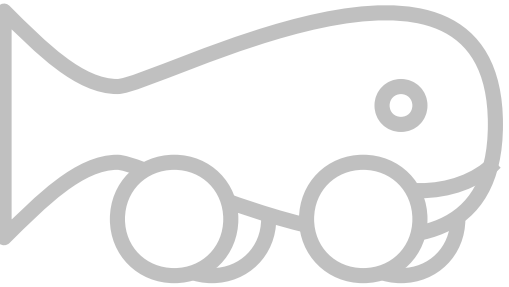
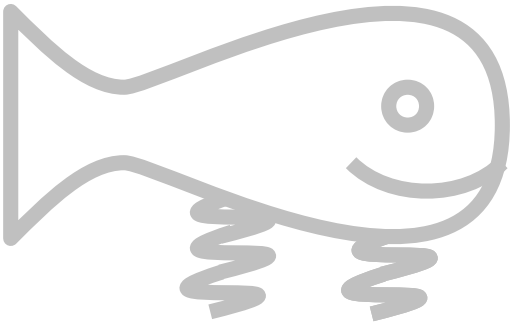
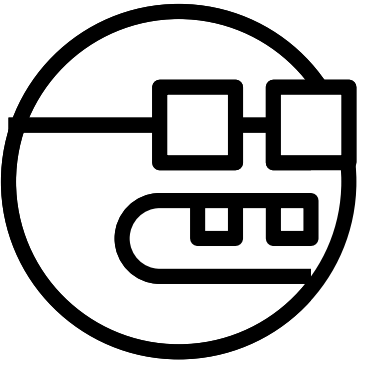
**Actually...  
I dismissed this talk  
because of a spelling  
error on slide 1**

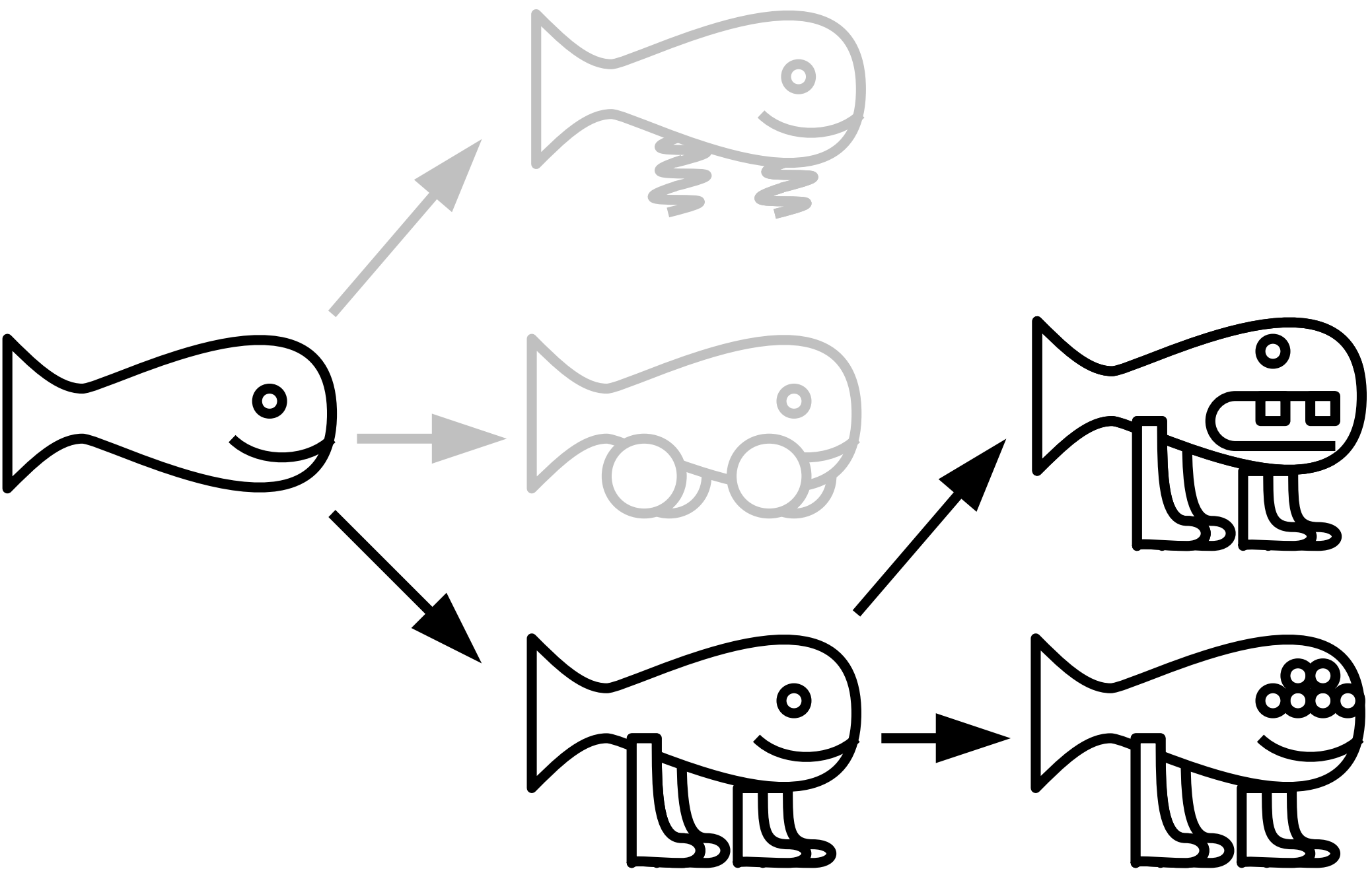


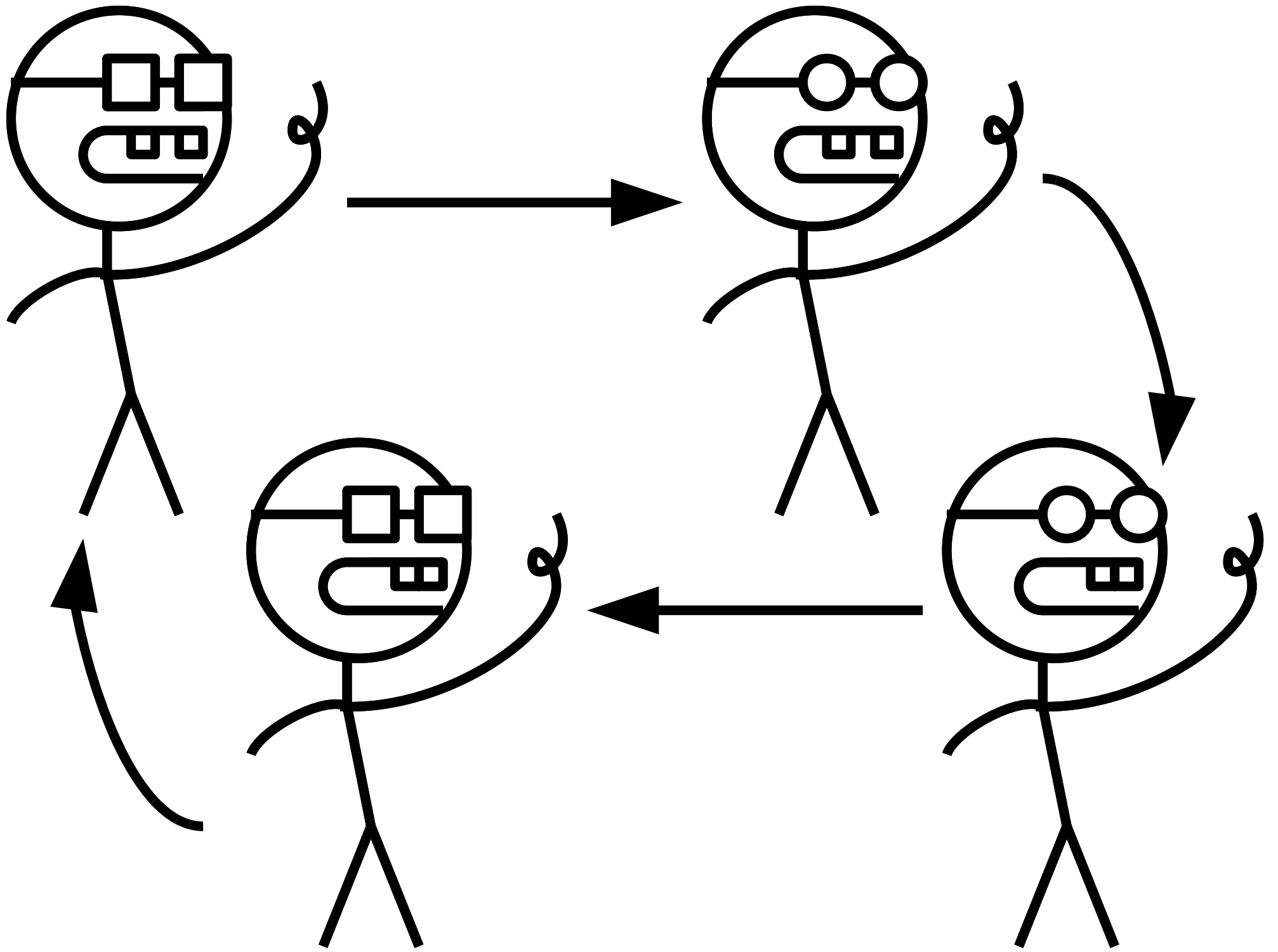
# Evolution



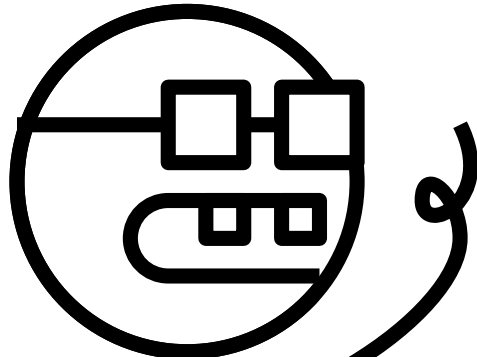






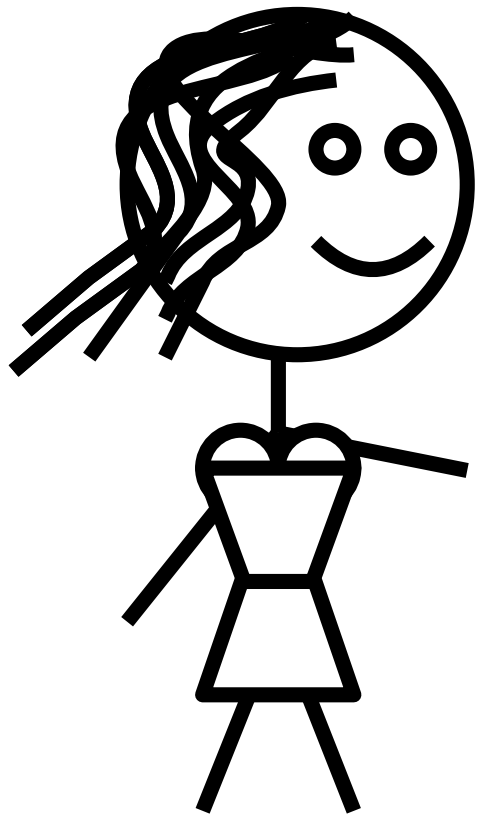


If only I knew how  
much they cost.

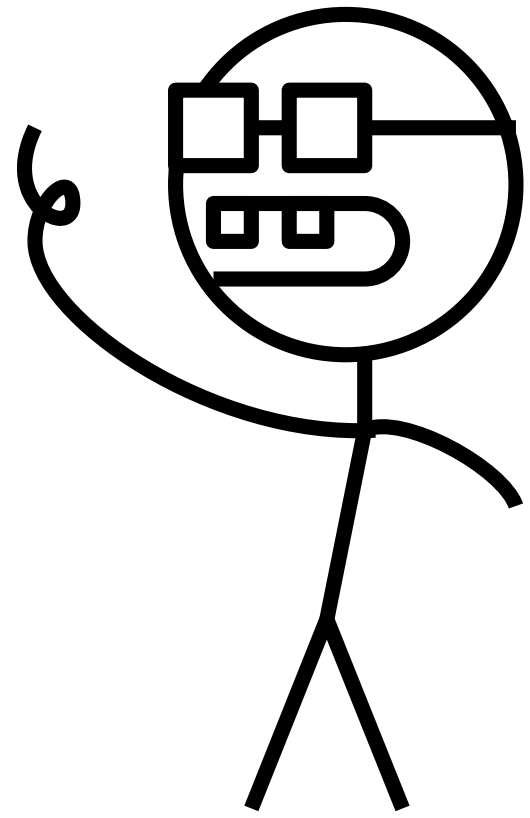




**You're so funny!  
Maybe you and me  
could sleep together?**



**Actually...**



# Grand Challenges



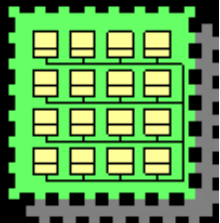
$\mu$ GC1: Batteries Not Included:

Minimizing the energy demands of electronics



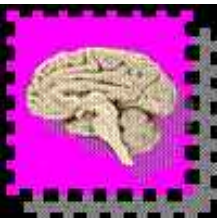
$\mu$ GC2: Silicon meets Life:

Interfacing electronics to biology



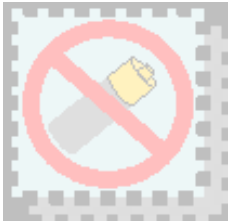
$\mu$ GC3: Moore for Less:

Performance-driven design for next-generation chip technology



$\mu$ GC4: Building Brains:

Neurologically-inspired electronic systems



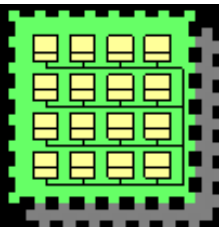
$\mu$ GC1: Batteries Not Included:

Minimizing the energy demands of electronics



$\mu$ GC2: Silicon meets Life:

Interfacing electronics to biology



$\mu$ GC3: Moore for Less:

Performance-driven design for next-generation chip technology



$\mu$ GC4: Building Brains:

Neurologically-inspired electronic systems

**Cache Hierarchy**      **Harvard Architecture**

**Programming Languages**

**Binary Arithmetic**

**Stacks**              **Cache Structure**

**Debuggers**

# **Common Sense**

**Von Neumann Architecture**

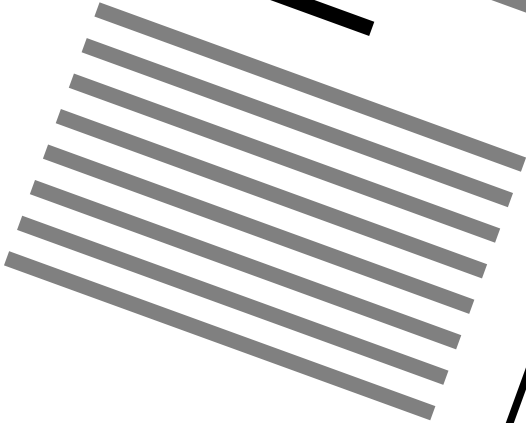
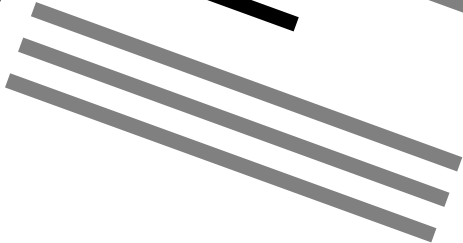
**Program Counters**

**Deterministic Code Execution**

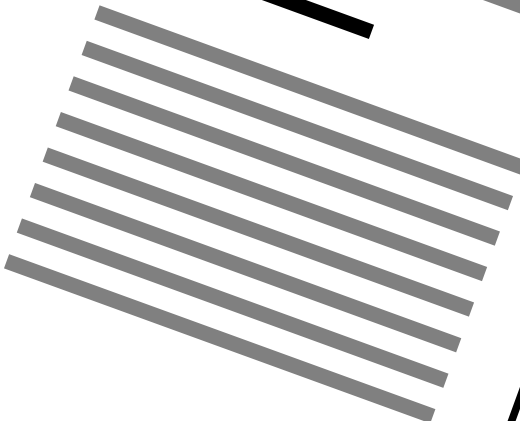
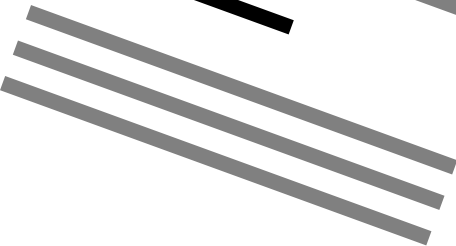
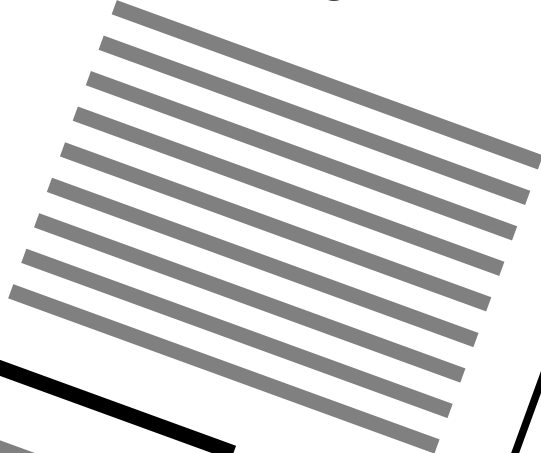
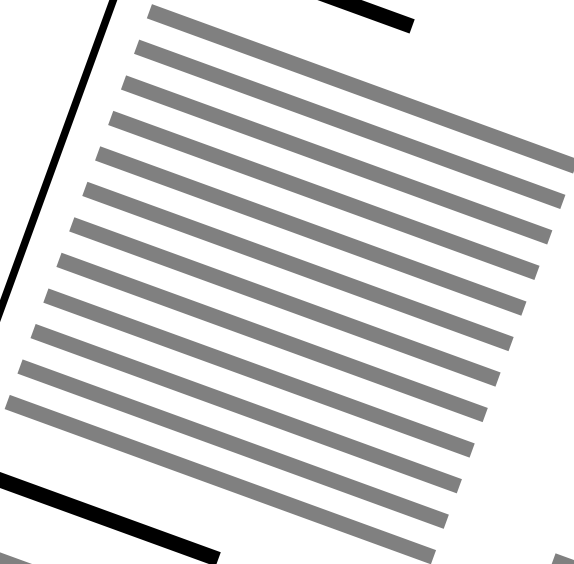
**Linear Memory**

**Sequential Code**

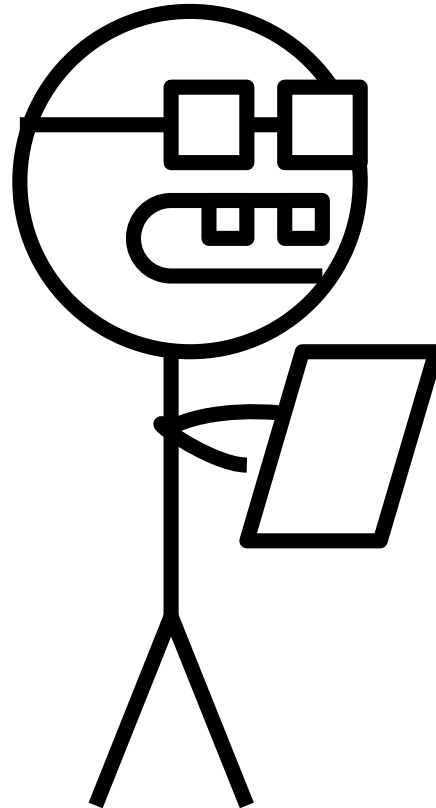
We got rid of stacks and  
have solved the parallelism  
problem and here are the  
results to prove it!



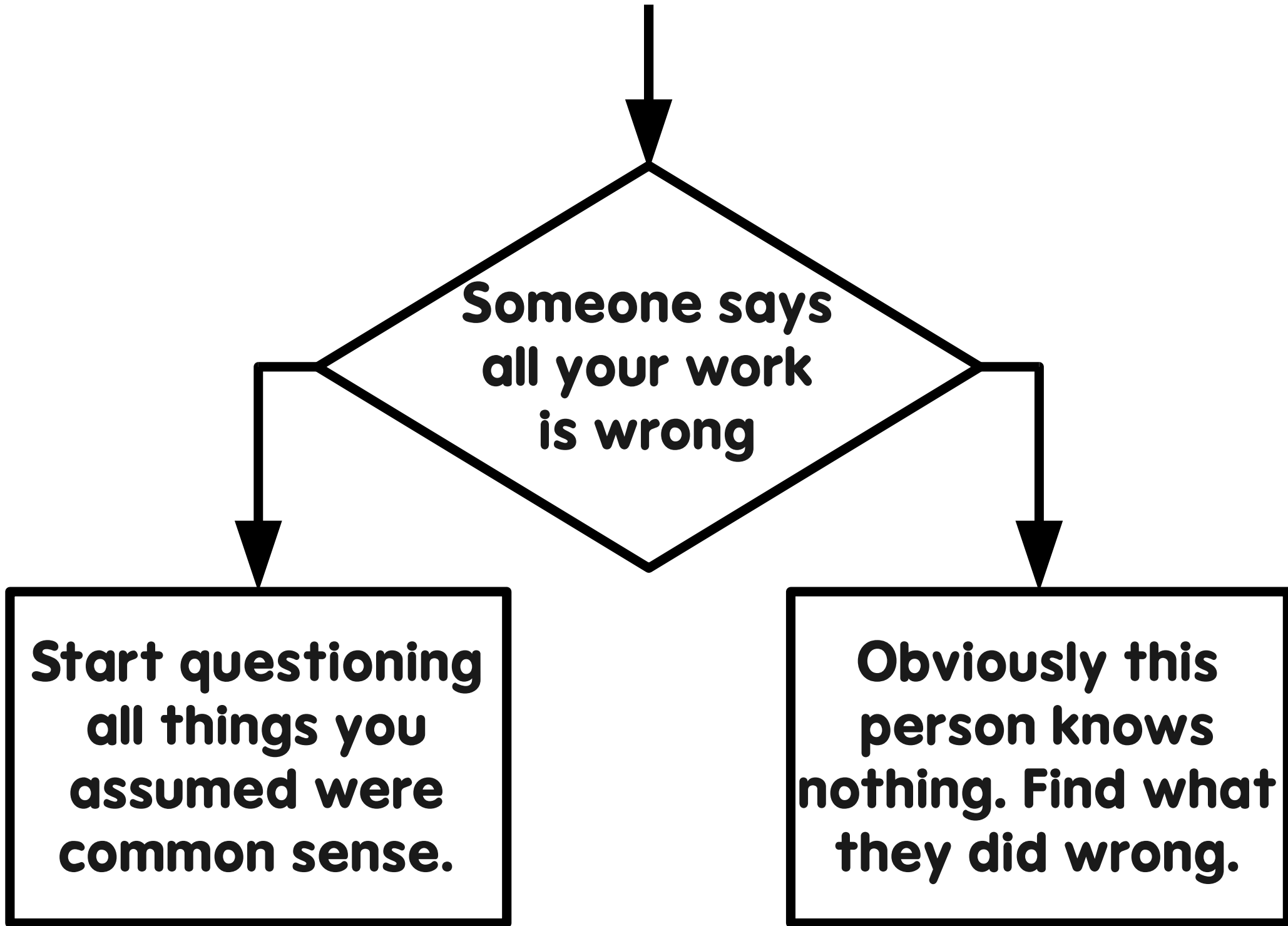
We made a benchmark run  
25% faster, but it assumes  
the impossible and it defies  
common sense



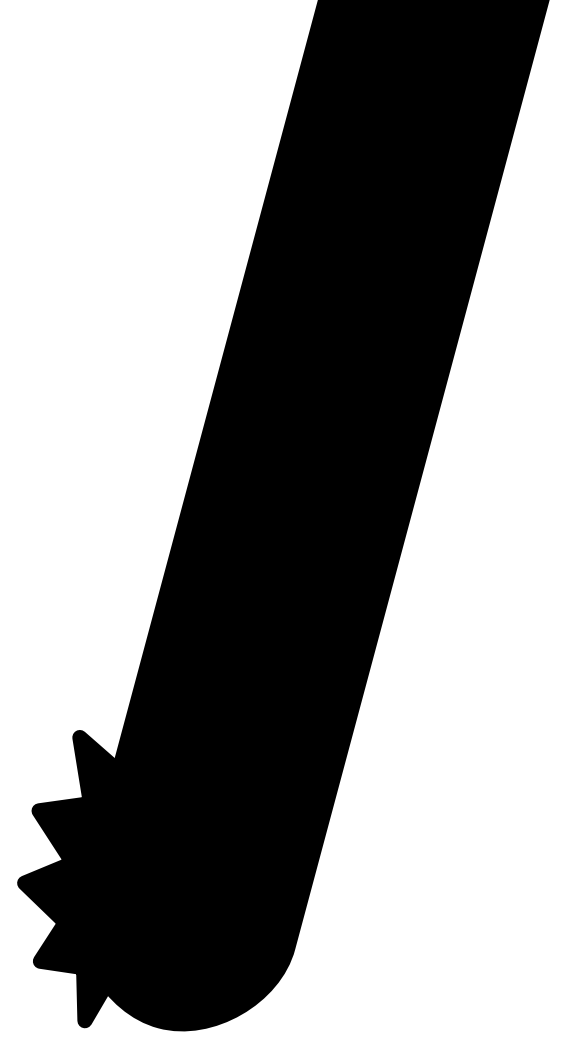
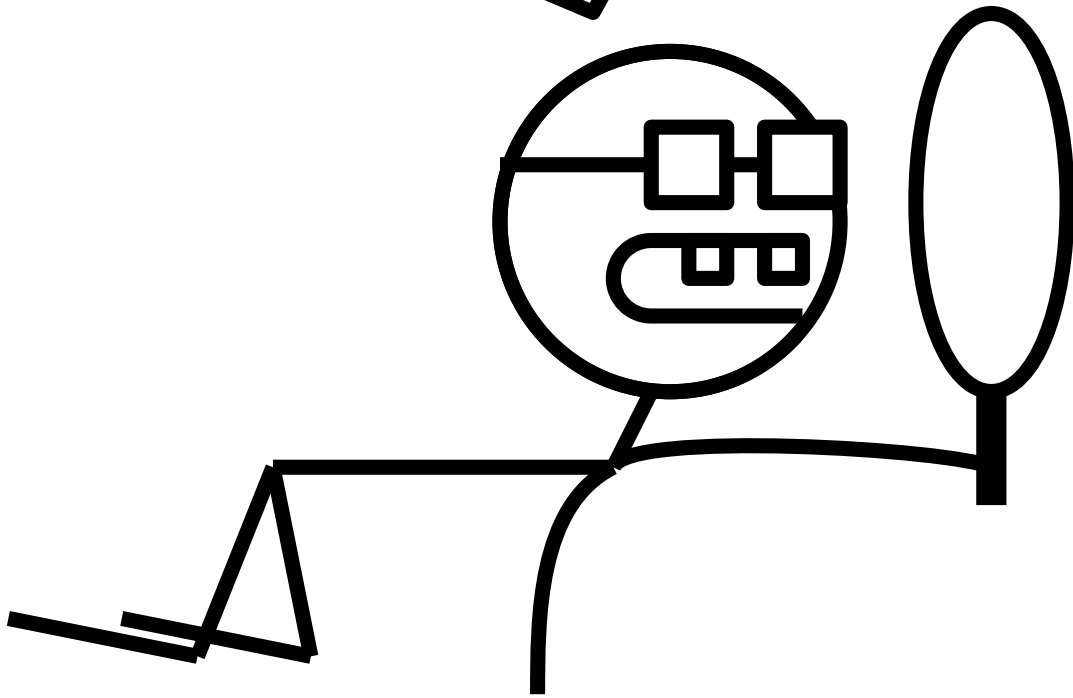
**Allow me to examine this  
work and with an open mind  
determine whether this is  
a step in the right direction**



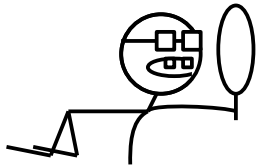




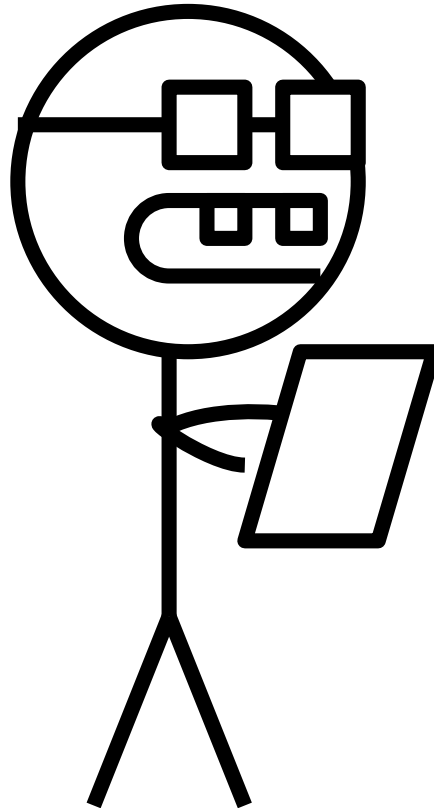
**This work looks  
slightly rough  
around the edges**



YOU  
ARE A  
MORON!



**After studying this work for  
four, maybe five minutes I say:  
WROOOOOONG!  
Your talk is of bullocks**



Isn't that the point of the  
Grand Challenges?



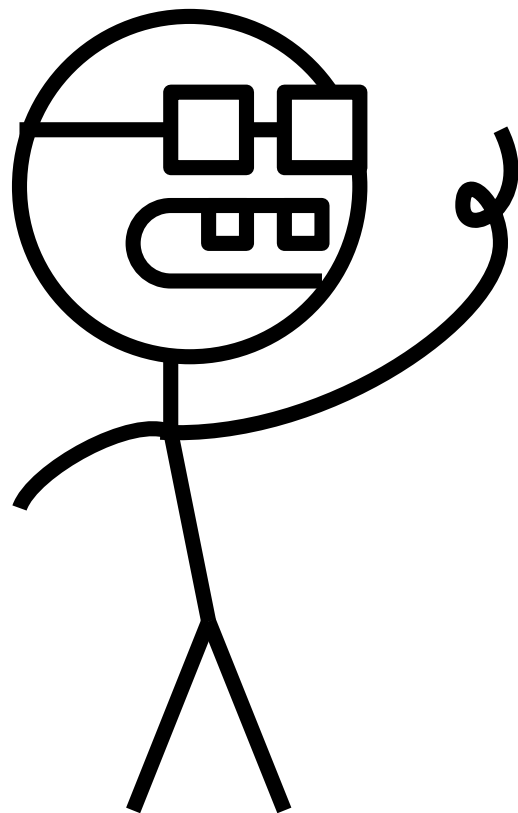


**Solutions?**



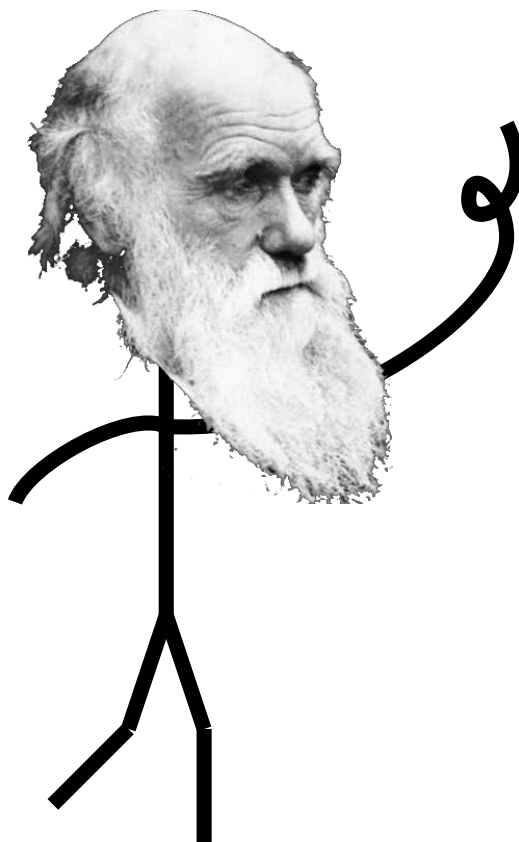
**Stagnancy!**

**Fear change!  
Damn kids  
on my lawn!**



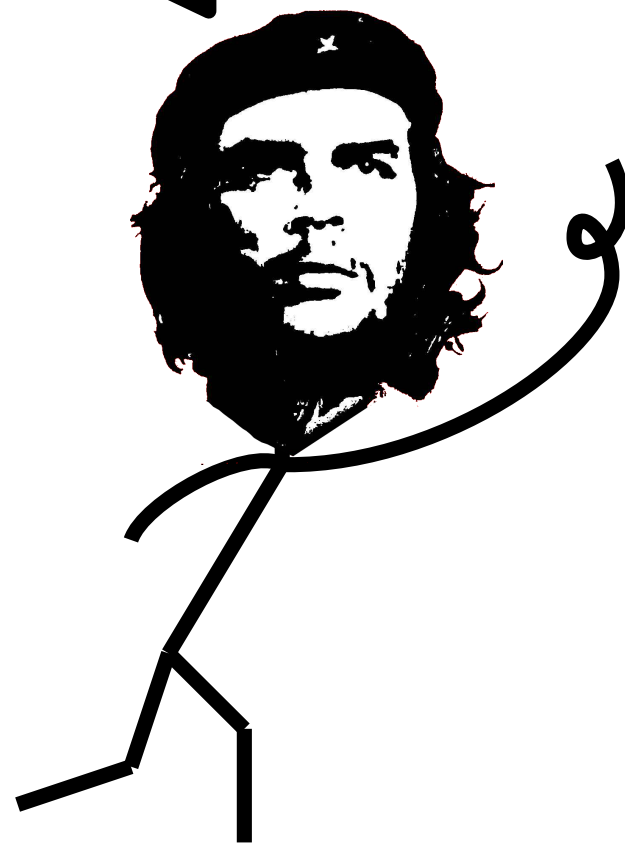
**Evolution!**

**Gradual  
beneficial  
change**



**Revolution!**

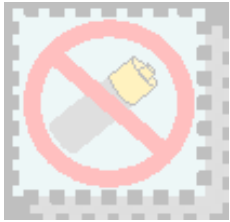
**Smash the  
system!**





$\mu$ GC0: Not being Snobs:

Actually doing science rather than acting like arseholes



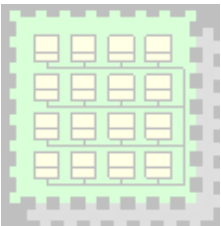
$\mu$ GC1: Batteries Not Included:

Minimizing the energy demands of electronics



$\mu$ GC2: Silicon meets Life:

Interfacing electronics to biology



$\mu$ GC3: Moore for Less:

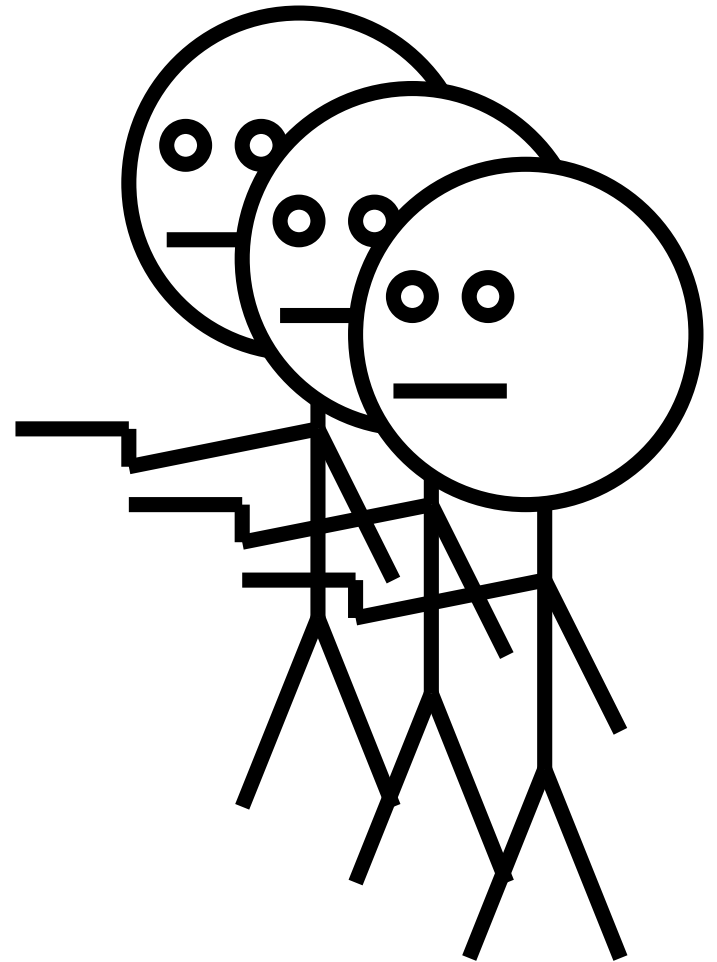
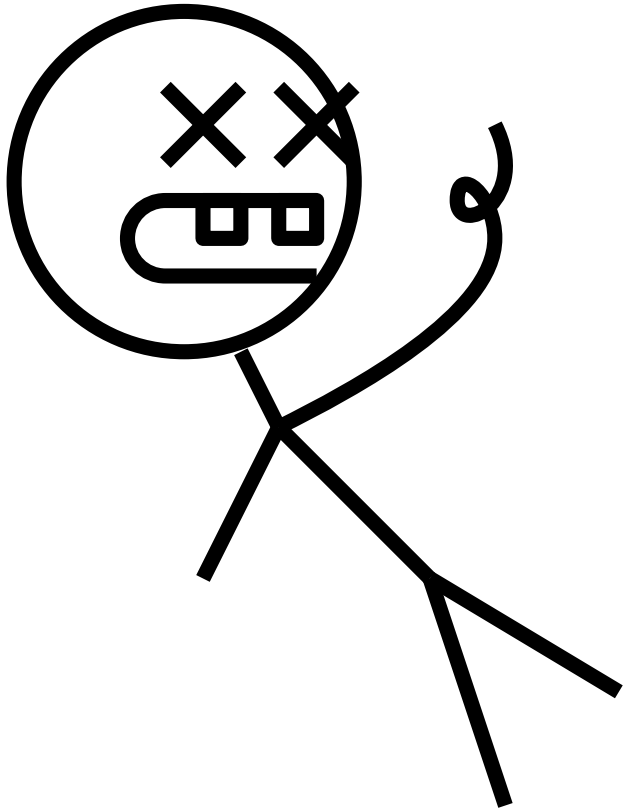
Performance-driven design for next-generation chip technology



$\mu$ GC4: Building Brains:

Neurologically-inspired electronic systems

**Actually! You should aim for the chest and not the head**





$\mu$ GC0: Reconsider the Structure of Scientific Ecosystem:

Find a better system for science or something? I don't know, maybe we are all screwed anyway



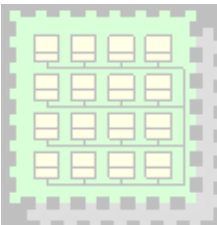
$\mu$ GC1: Batteries Not Included:

Minimizing the energy demands of electronics



$\mu$ GC2: Silicon meets Life:

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$\mu$ GC3: Moore for Less:

Performance-driven design for next-generation chip technology

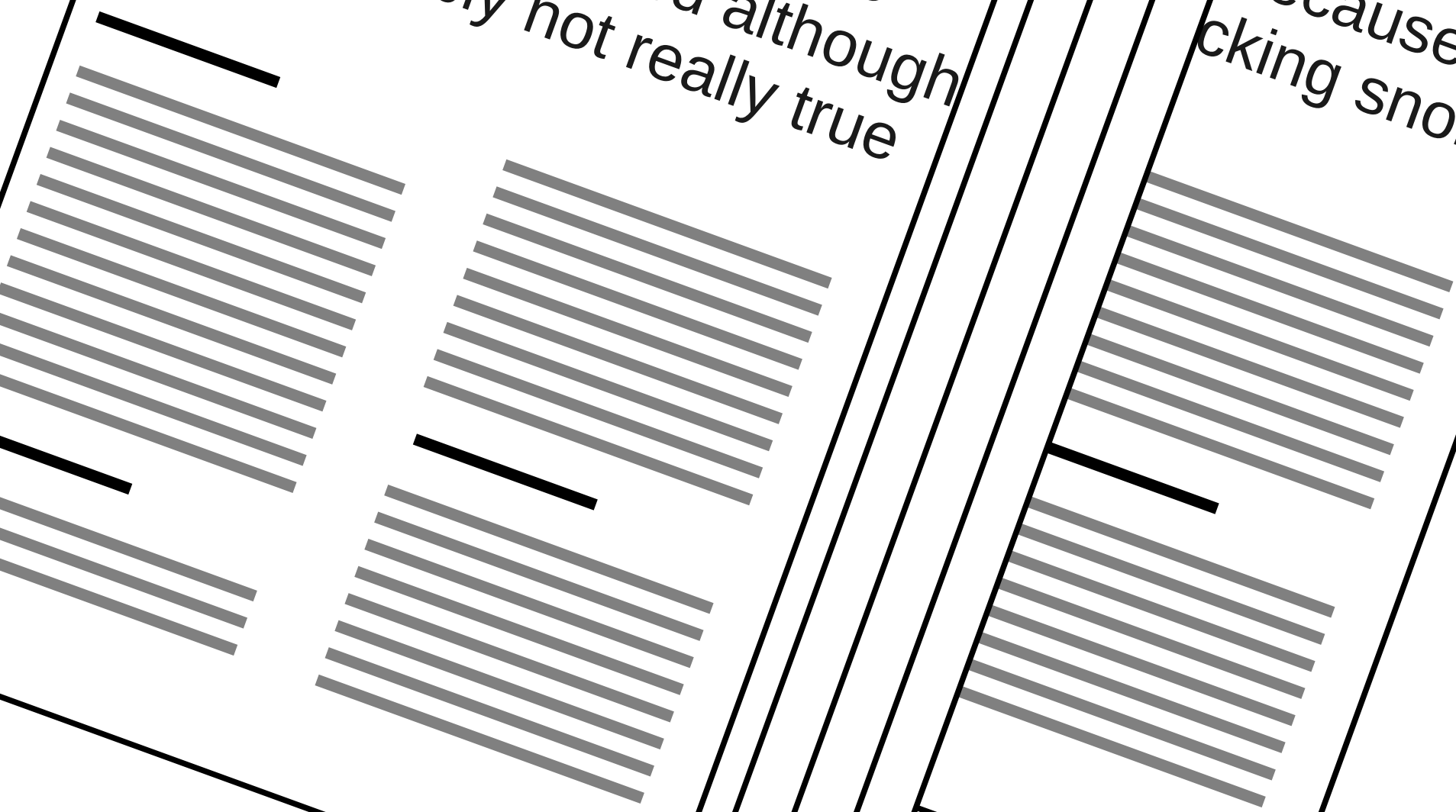


$\mu$ GC4: Building Brains:

Neurologically-inspired electronic systems

Stuff we actually wanted to say but couldn't because of fucking snobs

Stuff we have to say to appease all involved although it is probably not really true



# Science 2.0

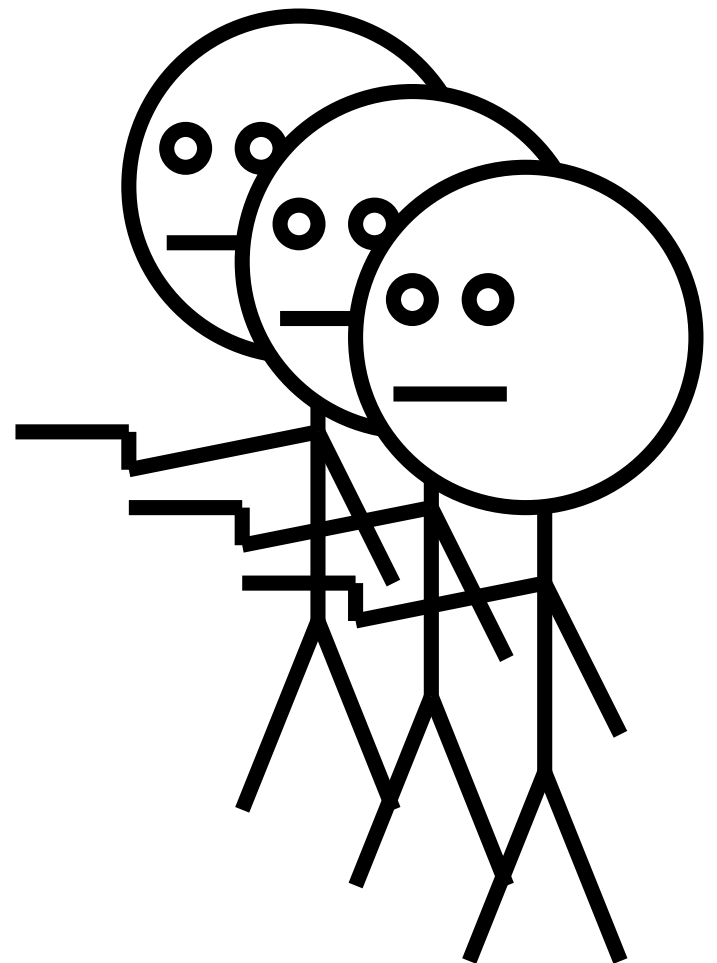
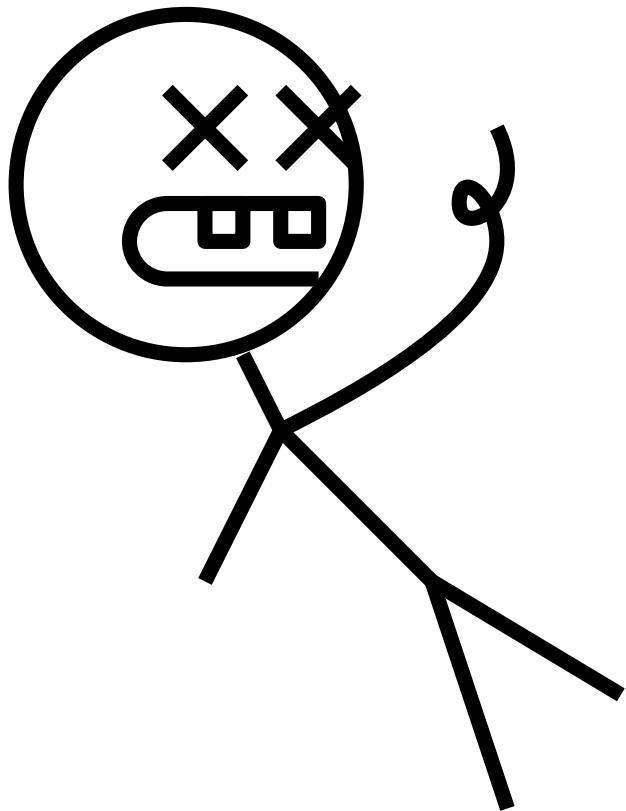
## Then:

- Software
  - Closed waterfall model
- Media
  - Paid journalists
- Science
  - Multi-year projects with a massive final deliverable

## Now:

- Software
  - Cyclic open-source model
- Media
  - Bloggers
- Science
  - Continuous collaborative open research clear results

**Actually! Wikipedia  
IS full of lies,  
and bloggers make  
spelling mitsakes!**



# Summary

- To solve the grand challenges we need a revolution
  - Scientific community is geared for evolution
- When we make the breakthrough, we probably won't even notice
  - We might be stuck in a local minima forever
- I have no answers
  - Throughout human history, every stagnant society based on elitism was overthrown
  - We have never tried to examine the system



Some time for questions