

# THE FATE OF THE MEAT WORLD

## DAVID PEARCE



*“May all that have life be delivered from suffering”*

-Gautama Buddha

(trad. c.566 BC - c.480 BC)

*“We advocate the well-being of all sentience, including humans, non-human animals, and any future artificial intellects, modified life forms, or other intelligences to which technological and scientific advance may give rise.”*

-The Transhumanist Declaration

(1998, last updated 2009)

[www.humanityplus.org/learn/philosophy/transhumanist-declaration](http://www.humanityplus.org/learn/philosophy/transhumanist-declaration)

## THE CHALLENGE:

### *Five obstacles to the well-being of all sentient life*



1. Physical pain - millions suffer chronic pain, but compare the fate with victims of congenital analgesia
2. Psychological pain – the hedonic treadmill
3. Meat-eating – over 50 billion factory-farmed non-human animals per year
4. Domestic pets (cats, etc) – obligate carnivores
5. Wildlife – the food chain, Nature “red in tooth and claw”



### OPPOSITES

Hundreds of millions of people worldwide suffer from chronic pain. But congenital analgesia can lead to risky behaviour...



## Congenital Analgesia



Hundreds of millions of people in the world suffer chronic depression or dysthymia

Why is the heritable “hedonic set-point” of our hedonic treadmill commonly so low?

[en.wikipedia.org/wiki/  
Rank\\_theory\\_of\\_depression](https://en.wikipedia.org/wiki/Rank_theory_of_depression)



## The Hedonic Treadmill





Pigs are as intelligent - and **sentient** - as a two year old human toddler.

Factory-farmed pigs live in crates surrounded by cold metal bars. They spend their whole lives on wet, faeces-caked concrete floors in filthy overcrowded warehouses.

Pigs may first see direct sunlight when they are crammed onto a truck bound for the slaughterhouse.



## Meat Production



Cats look cute.

But what does it feel like...

to be **eaten alive?**



## Obligate Carnivores

# CHALLENGE FIVE: WILDLIFE



“The total amount of suffering per year in the natural world is beyond all decent contemplation. During the minute that it takes me to compose this sentence, thousands of animals are being eaten alive, many others are running for their lives, whimpering with fear, others are slowly being devoured from within by rasping parasites, thousands of all kinds are dying of starvation, thirst, and disease. It must be so. If there ever is a time of plenty, this very fact will automatically lead to an increase in the population until the natural state of starvation and misery is restored.”

- Richard Dawkins, “God's Utility Function,”  
*Scientific American* (November, 1995), p. 85





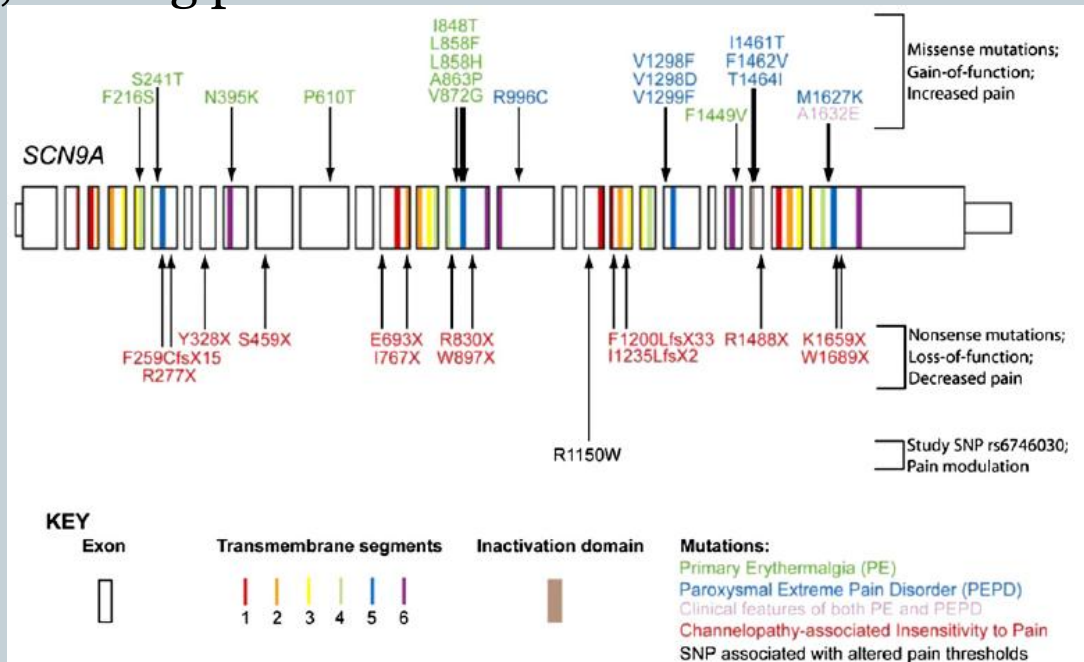
# CHALLENGE ONE: PHYSICAL PAIN

## CASE STUDY - *SCN9A* GENE



- A single gene plays the dominant role in our level of pain-sensitivity
- Variant alleles of the gene *SCN9A* code for the  $\alpha$ -subunit of the voltage-gated sodium channel Nav1.7 in nociceptive neurons
- Activating mutations in *SCN9A* lead to rare conditions such as “man on fire” syndrome - relentless, searing pain
- Inactivating mutations cause a complete absence of pain
- Other alleles cause unusually high, or *unusually low*, pain sensitivity

Reimann *et al*, Pain perception is altered by a nucleotide polymorphism in *SCN9A*, *Proc Natl Acad Sci. USA.* 2010 Mar 16; 107(11):5148-53.





# CHALLENGE ONE: PHYSICAL PAIN THE REPRODUCTIVE REVOLUTION



- Imminent reproductive revolution of “designer babies”
- Pre-implantation diagnosis will shortly become routine

## **Question:**

Which allele of SCN9A - i.e. what level of pain sensitivity - would you choose for your future children?

## **Prediction:**

Intense selection pressure against the nastier variants of SCN9A gene

# CHALLENGE ONE: PHYSICAL PAIN

## LONG-TERM PROSPECTS



- Is abolition of phenomenal pain feasible? Or merely a reduction in pain sensitivity?

### **Options For A World With Nociception But No Phenomenal Pain:**

1. Information-bearing gradients of pleasure? (functional analogues of pain - information-bearing dips of extreme bodily well-being without the nasty raw feels. *cf.* pain asymbolia)
2. Smart prostheses with a manual override (*cf.* silicon etc robots)

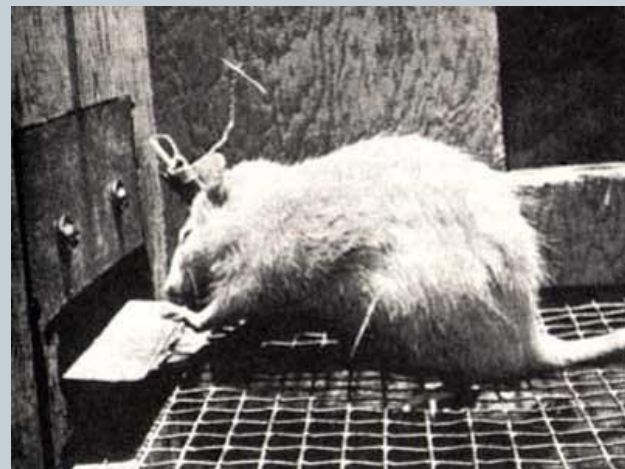
[Unsolved Mystery: Why do organic robots like us sometimes suffer, whereas our silicon (etc) robots don't undergo phenomenal pain in response to noxious stimuli? *cf.* The "Hard Problem" of Consciousness; the "explanatory gap"; "zombies"; etc]

# CHALLENGE TWO: PSYCHOLOGICAL PAIN

## THE HEDONIC TREADMILL - ABOLITION VERSUS RECALIBRATION



- Wireheading? Intracranial self-stimulation of the reward centres of the brain ([www.wireheading.com](http://www.wireheading.com))
  - Delivers uniform motivated bliss; no physiological tolerance
  - BUT:
    - not evolutionarily stable - selection pressure against wireheads. Wireheads wouldn't want to raise baby wireheads
    - not sociologically plausible
    - a recipe for stasis
  - Complication: pure bliss (activation of the mu opioid receptors) and motivation / anticipated reward (activation of mesolimbic dopamine receptors) are intimately linked in the brain; but dissociable
- M.L. Kringelbach & K.C. Berridge (Eds.), *Pleasures of the Brain*. Oxford: Oxford University Press, 2010.
- Induction of pure bliss - permanent stimulation of upregulated mu opioid receptors - without dopamine-driven desire = Buddhist nirvana. But is nirvana evolutionarily stable?!





# CHALLENGE TWO: PSYCHOLOGICAL PAIN DESIGNER DRUGS



**Drug-induced pleasure can be:**  
shallow, amoral, one-dimensional and hedonistic  
-OR-  
*deep, empathetic, multi-dimensional and life-enriching*

Current recreational drugs...	activate the brain's negative feedback mechanisms
Current clinical drugs...	mediocre; designed to minimise "abuse potential"
Future wonderdrugs...	"Super Soma"?

PROS: reversible and fine-grained control of mood, emotion, motivation, empathy, aesthetic sense, introspection, spirituality.

DOWNSIDE: Do we really want to medicate our children from birth?

So...

Could post-genomic reproductive medicine deliver genetically preprogrammed:

*invincible physical superhealth?*

-AND-

*invincible mental superhealth?*





# CHALLENGE TWO: PSYCHOLOGICAL PAIN THE REPRODUCTIVE REVOLUTION



## **Question:**

Prospective Parents:

What genetic setting of your future child's "hedonic set-point" would you choose?

Would you choose *any* predisposition to anxiety disorders or depression?

## **Prediction:**

Intense selection pressure **in favour of happier children** as transition to "designer babies" gathers pace

[www.reproductive-revolution.com](http://www.reproductive-revolution.com)

CHALLENGE THREE: MEAT EATING  
OVERCOMING ANTHROPOCENTRIC BIAS  
SHOULD ALL TRANSHUMANISTS ADOPT A CRUELTY-FREE VEGAN LIFESTYLE?

Factory-farmed  
meat

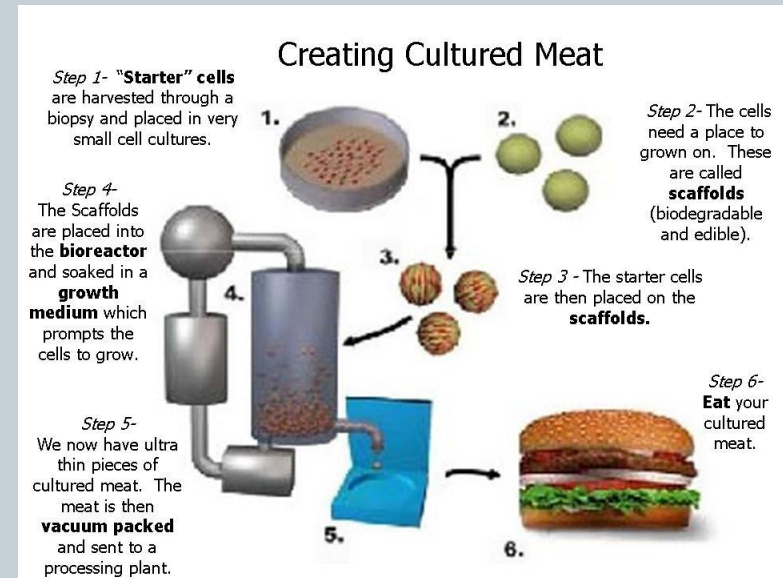
VS

Mass-produced  
in vitro meat

- Can moral argument alone trump self-serving bias?
- Maybe not.

But could the mass-production of *inexpensive, delicious cultured meat* products lead to *global veganism*?

- [en.wikipedia.org/wiki/In\\_vitro\\_meat](http://en.wikipedia.org/wiki/In_vitro_meat)
- [www.new-harvest.org](http://www.new-harvest.org)

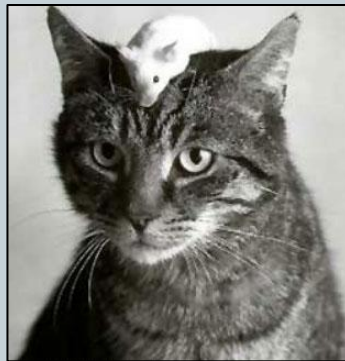


# CHALLENGE FOUR: PETS

## CASE STUDY



- 500 million domestic cats worldwide kill billions of birds and small rodents each year in gruesome ways
- Stopgap remedy: e.g. mass-produced catnip-laced *in vitro* mincemeat?
- Genetic tweaking
- Long-term solution: comprehensive genomic rewrites





# CHALLENGE FIVE: WILDLIFE SERIAL KILLERS COMPARED

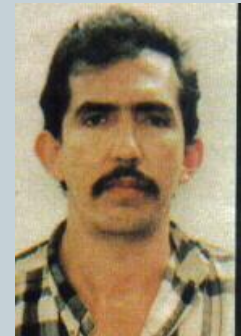
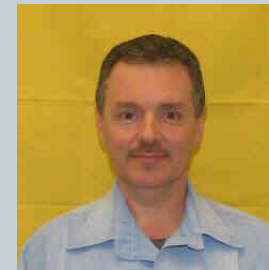
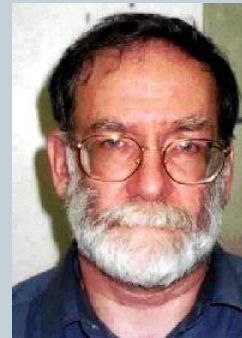


## Spot the difference

These predators all prey on the weak, the old, the innocent, the vulnerable...



Should we revise our double standards?





## CHALLENGE FIVE: WILDLIFE

### LION AND LAMB - DO WE WANT TO CONSERVE WILD ANIMALS?



- If we do, what kinds of non-human animals do we want in our wildlife parks?
- Is it ethical to perpetuate “predators” and “prey” - a living world full of disembowelment, suffocation, being eaten alive, starvation, dying of thirst?

#### ALTERNATIVES TO DARWINIAN LIFE

- Ecosystem redesign
- Immunocontraception for population control
- Reprogramming predators
- Remote-controlled neuroimplants for behavioural modification
- Genomic rewrites
- GPS tracking and surveillance of terrestrial vertebrates
- Nanobots to manage the oceans and aquatic ecosystems

*“Homo sapiens, the first truly free species, is about to decommission natural selection, the force that made us.... Soon we must look deep within ourselves and decide what we wish to become.”*

-Edward O. Wilson  
Consilience, The Unity of Knowledge (1998)

# ULTIMATELY...



A PAN-SPECIES WELFARE STATE?



[www.abolitionist.com/reprogramming](http://www.abolitionist.com/reprogramming)

# THE FATE OF THE MEAT WORLD

## MIND UPLOADING/WHOLE BRAIN EMULATION



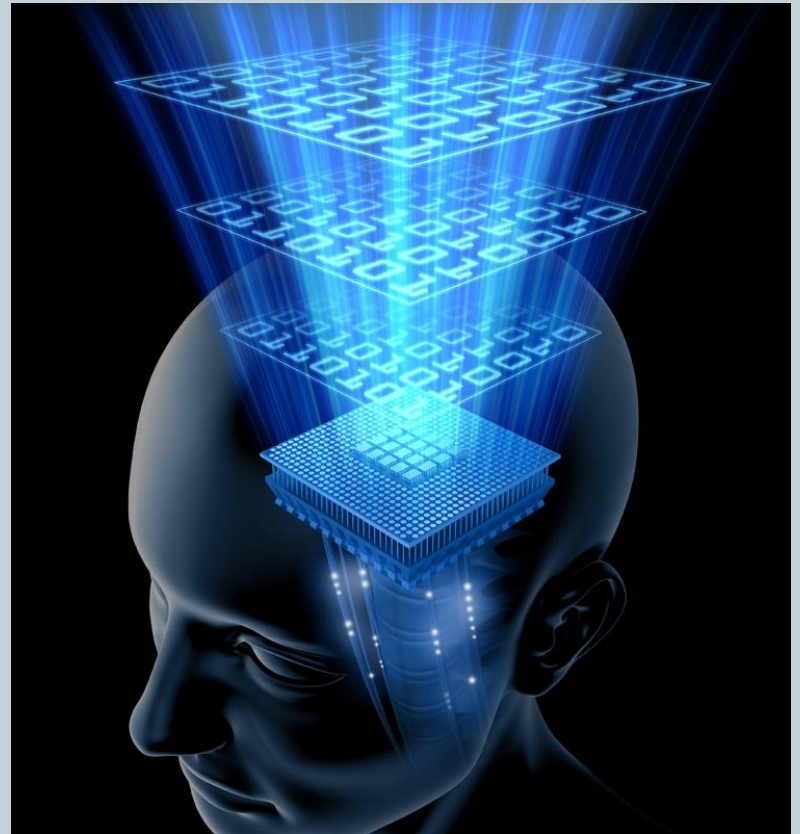
- Is it feasible to scan and digitise biological mind/brains and copy their state into a supercomputer system?  
([en.wikipedia.org/wiki/Mind\\_uploading](http://en.wikipedia.org/wiki/Mind_uploading))

*Maybe.*

**BUT:** consider the meat-world selection pressure against “destructive uploading”  
(Will sceptics hand out Darwin Awards?)

So... Primordial life in the Basement goes on.

Therefore...



# PREDICTION FOR PRIMORDIAL ORGANIC LIFE



*“The limits of pleasures are as yet neither known nor fixed, and we have no idea what degree of bodily bliss we are capable of attaining.”*

-Jean Anthelme Brillat-Savarin  
[Physiologie du Goût (1826)]  
(1755 - 1826)



## THE FUTURE:

- *Genetically preprogrammed well-being of all sentience*
- *Animation by gradients of life-long intelligent bliss*
- *Everyday well-being orders of magnitude richer than today’s “peak experiences”*



# “MIGHTY MOUSE”



- **MIGHTY MUSCLES:** normal mouse (left) and mouse that lacks myostatin and overproduces another protein, resulting in four times as much muscle.

Credit: Se-Jin Lee, Johns Hopkins University School of Medicine

SOURCE: *Technology Review*; October 18, 2007

- **CONJECTURE:** Analogous insertion of multiple extra copies of the mu opioid receptor and regulatory promoters into the twin “hedonic hotspots” of the brain can deliver superhuman capacity for pleasure in the richest sense
- Dopaminergic enhancements can deliver superhuman motivation
- Can oxytocin enrichment deliver superhuman empathy?



LONG TERM: “re-encephalisation of emotion”?

[www.superhappiness.com](http://www.superhappiness.com)

*“Whatever was the beginning of this world, the end will be glorious and paradisiacal, beyond what our imagination can conceive.”*

-Joseph Priestley  
(1733 – 1804)



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**PHILOSOPHY:  
ABOLITIONIST.COM**

**THE END**