# Fashionably Late

# Zombies Among Us in Nature, Technology, and the Business World

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The Zombie Perceived: Religion, Media, and Society
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# Fashionably Late

#### Part One: Matters of Life and Death

the difficulty of defining life, death, and undeath

#### Part Two: Bullets Won't Stop It

the biological zombie process: parasitic mind control

#### Part Three: Fresh Off the Slab

zombie emergence in technology

#### Part Four: Trendspotting

emergence of bad ideas in the marketplace

- **Living:** Moving around and doing stuff or at least doing stuff. Biologically: eat excrete reproduce (maybe die)
- Dead: Used to be alive and fell over. Hasn't gotten back up yet. Yet... A number of vital functions have stopped and chances of recovery are slim and dwindling further... (pretty fuzzy)
- **Undead:** Used to be alive, died ("died"), and then started moving around again. Not usually applied to people who have recovered from death via medical procedure (CPR, defibrillators, etc.) Soul missing. Problematic, seeing as there's no standard Turing test for the presence of a soul...





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#### Functionally defined, then...

- Some shoddy semblance of prior function, perhaps as a kind of weak cover
- Adoption of new priorities, neglect of previous priorities
- Insidious communicability
- Reduced problem-solving skills
- Reduced tendencies to self-preservation

Theory of Zombie:

Centralized Mind vs. Emergent/Hive Mind Behavior

#### Centralized mind

- Camazotz
- Zombie-master
- Head vampire

# Emergent Superorganism

- Herd/pack behavior
- Hive mind
- Amoeba/slime mold metaphor

#### Centralized mind

- Camazotz
- Zombie-master
- Head vampire

 Largely unsupported by scienctific study

# Emergent Superorganism

- Herd/pack behavior
- Hive mind
- Amoeba/slime mold metaphor

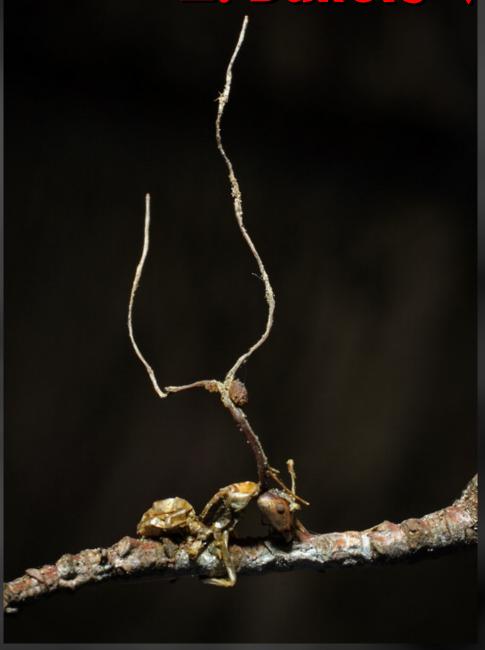
 Actually occurs in nature

# The Biological Zombie Process: Parasitic Mind Control

- Cordyceps: a fungus gets ants high in order to distribute spores
- Lancet fluke: ditto so as to get eaten by ungulates
- Gordian worm: death by drowning for crickets and grasshoppers
- Toxoplasma: suicidal rats, warm-hearted cat ladies
- Wolbachia: hives, class structure, parthenogenesis

### Cordyceps unilateralis

Spore lands on ant, germinates, sends mycelia through spiricules, consumes soft tissues but avoid vital organs, invades brain to alter perceptions of pheromones, guides to place of suitable humidity and temperature, kills ant and forms fruiting body.



Cordyceps-infected ant. Note mandibles clamped onto twig...

Image courtesy of myriorama on Flickr, CC-A-NC-SA

#### Cordyceps unilaterilis

Not the same species of Cordyceps from which we derive the immunosuppressant cyclosporin (subsessilis) or the one currently under study for use as a substance to protect bone marrow from the effects of irradiation or as an antidepressant (sinensis).

#### Dicrocoelium dendriticum

Cysts obtained by ant from snail slime. Fluke takes control ant's actions by manipulating a nerve ganglion. As evening cools ant climbs to top of grass and clamps on with mandibles until eaten by a passing ungulate or dawn arrives. If uneaten, resumes "normal life" until next evening...

#### Spinochordodes tellinii

Nematomorph larvae, once ingested by orthopteran insects, grow into final form, cause cricket or grasshopper to fall into water by unknown means (produce proteins linked to neurotransmitters and geotactic activity), leave host to seek mates.



Gordian worm

Not exactly microscopic...

Image courtesy of Anders Lennver (jackorion) on Flickr, CC-A-NC

### Toxoplasma gondii

Primary host is feline. Infection in rats causes them to seek rather than avoid scent of cat urine, thus increasing chances of transferal to primary host.

Rumored effects in humans: slower reaction times, makes women more "warm-hearted".

Wild mouse that randomly jumped onto a housecat's head. Probable Toxoplasma gondii infection.

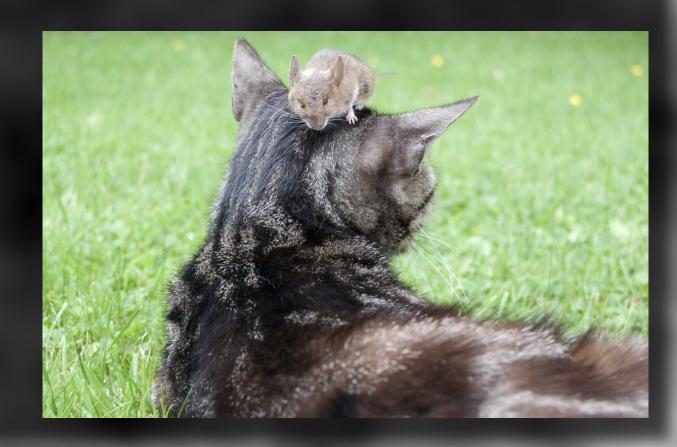


Image courtesy of Denis Defreyne (denisdefreyne) on Flickr, CC-A

#### Wolbachia genus

Possibly the most common reproductive parasite in the biosphere. Infects insects and arthropods. Causes (depending on species) death of males, feminization, cytoplasmic incompatibility, parthenogenesis.

Enormous projected impact in speciation.

#### Wolbachia

- Intracellular existence
- Transmitted via females only
- Probable manipulation of genes via epigenetics

#### Mitocondria\*

- Intracellular existence
- Transmitted via females only
- Probable manipulation of genes via epigenetics

<sup>\*</sup> WARNING: This comparison springs from wild and unsupported speculation on the part of the author.

# Zombie Emergence in Information Technology

#### <u>In development</u>

- Artificial life
- Core Wars

#### In the wild

- Viruses, Worms, Trojans, and Spyware
- Botnets

- Complex behavior from simple rules
- Computers as petri dishes
- Mutations and genetic algorithms
- Thousands or millions of generations in an evening of work
- Easily replicated experiments
- Big Red OFF Switch

### Telling Reality from a Simulation

#### Reality

- ????

#### <u>Simulation</u>

- 555
- Big Red OFF Switch?

Escapees from the lab: Malware, worms, trojans, and botnets

- Simulations of life (consume resources, replicate, mutate, die)
- Autonomous (viruses, worms)
- Require human assistance ("memes")
- Centrally controlled ("zombie-master" botnets)

Most "zombie-like" (autonomous or centrally controlled):

- Maintain semblance of normal function (slowed reaction times, make host "warm-hearted" to other infections)
- Spam generation, Distributed Denial of Service, processor "on loan" to foreign tasks

# Emergence of Bad Ideas in the Marketplace

#### On the subject of corporations:

- Complex behavior from simple rules (bylaws and articles of operation)
- Simulations of life (consume resources, replicate, mutate, die)
- Semi-autonomous or require human assistance
- Centrally controlled ("zombie-master")
- -NO- Big Red OFF Switch?

Subject to diseases and parasites:

- "Best Practices"
- •ISO 900X
- •6-Sigma
- Green / Zero-Carbon Emissions
- Minimum wage / standard benefits / insurance

Other organizations potentially subject to infection:

- Political parties
- Religions
- Charities
- Civic organizations
- Advocacy groups

#### Lest We Forget...

- Some shoddy semblance of prior function, perhaps as a kind of weak cover ("neoconservative infection of the Republican Party")
- Adoption of new priorities, neglect of previous priorities ("Pauline infection of the New Testament church")

#### Lest We Forget... (cont.)

- Insidious communicability ("ISO 9000 infection of corporate culture")
- Reduced problem-solving skills ("6-Sigma infection of corporate culture")
- Reduced tendencies to self-preservation
   ("extra resource consumption from minimum wage laws and 'green' operation")

# Fashionably Late: In Summary

- Life and Unlife: Simple rules, complex behavior, communicable corruption
- Code is Code: DNA/RNA/Epigenetics or computer programming or operational rules for organizations. Code can be manipulated or corrupted
- The Best Defense is a Good 

   A Healthy Immune System