

Fashionably Late

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

presented at the Atlanta Zombie Symposium
The Zombie Perceived: Religion, Media, and Society
Sep 12, 2009, Clary Theater
Georgia Institute of Technology

by Laszlo Xalieri
author, business consultant, independent researcher

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

1: Matters of Life and Death

- **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...

1: Matters of Life and Death



Images from "Blade Runner" © 1982, 1991 by the Blade Runner Partnership and/or The Ladd Company.
ALL RIGHTS RESERVED

1: Matters of Life and Death

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

1: Matters of Life and Death

Theory of Zombie:

**Centralized Mind vs.
Emergent/Hive Mind Behavior**

1: Matters of Life and Death

Centralized mind

- Camazotz
- Zombie-master
- Head vampire

Emergent Superorganism

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

1: Matters of Life and Death

Centralized mind

- Camazotz
- Zombie-master
- Head vampire

- Largely unsupported by scientific study

Emergent Superorganism

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

- Actually occurs in nature

2: Bullets Won't Stop It

**The Biological Zombie Process:
Parasitic Mind Control**

2: Bullets Won't Stop It

- **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

2: Bullets Won't Stop It

Cordyceps unilateralis

Spore lands on ant, germinates, sends mycelia through spiracles, 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.

2: Bullets Won't Stop It



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

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

2: Bullets Won't Stop It

Cordyceps unilateralis

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*).

2: Bullets Won't Stop It

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...

2: Bullets Won't Stop It

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.

2: Bullets Won't Stop It



Gordian
worm

Not exactly
microscopic...

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

2: Bullets Won't Stop It

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”.

2: Bullets Won't Stop It

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



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

2: Bullets Won't Stop It

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.

2: Bullets Won't Stop It

Wolbachia

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

*Mitochondria**

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

* WARNING: This comparison springs from wild and unsupported speculation on the part of the author.

3: Fresh Off the Slab

Zombie Emergence in Information Technology

3: Fresh Off the Slab

In development

- Artificial life
- Core Wars

In the wild

- Viruses, Worms, Trojans, and Spyware
- Botnets

3: Fresh Off the Slab

- 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

3: Fresh Off the Slab

Telling Reality from a Simulation

Reality

-
-
-
-
- ???

Simulation

-
-
-
-
- ???
- Big Red OFF Switch?

3: Fresh Off the Slab

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)

3: Fresh Off the Slab

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

4: Trendspotting

**Emergence of Bad Ideas
in the Marketplace**

4: Trendspotting

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?

4: Trendspotting

Subject to diseases and parasites:

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

4: Trendspotting

Other organizations potentially subject to infection:

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

4: Trendspotting

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”)

4: Trendspotting

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 ~~Chain Saw~~ Offense – A Healthy Immune System