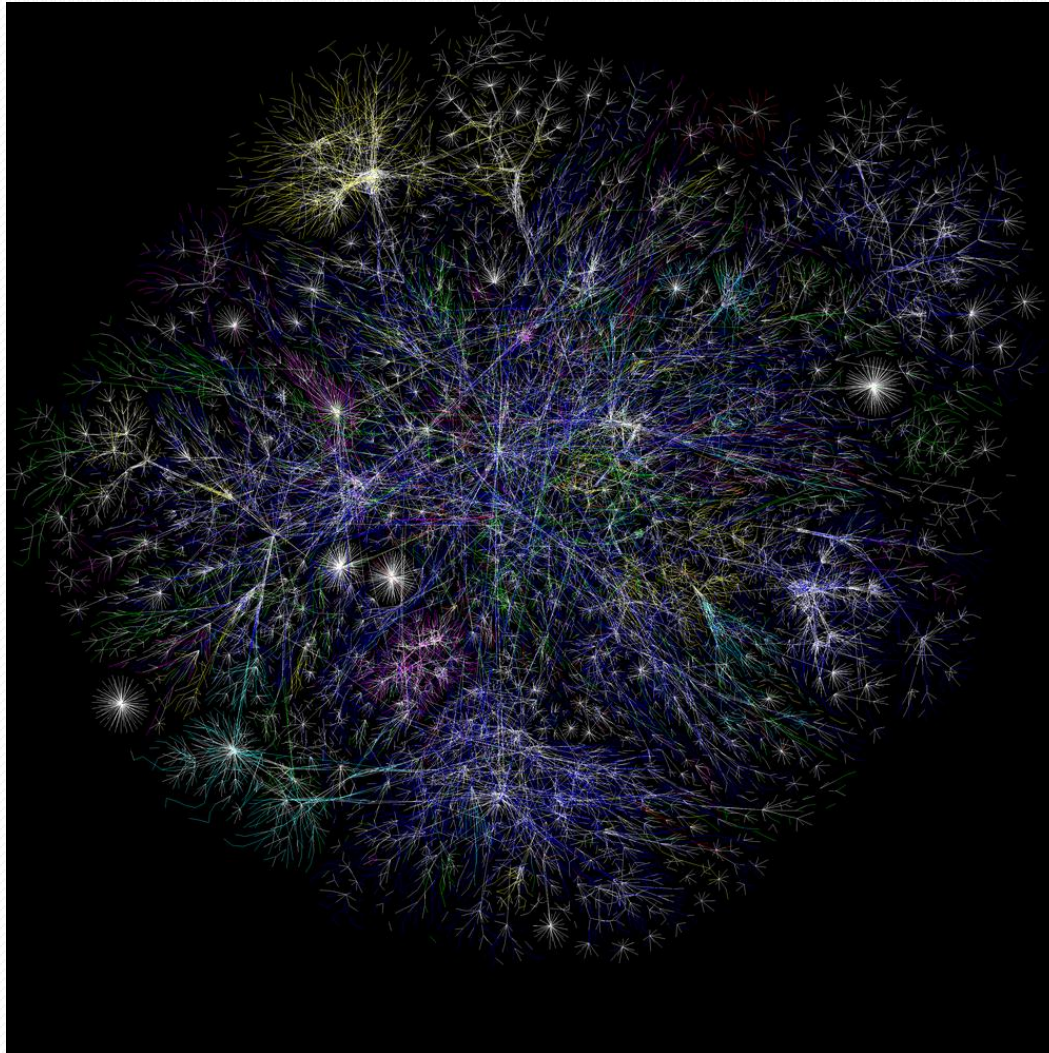


The Emerging Global Mind, Cooperation, and Compassion

Steve Omohundro, Ph.D.
Omai Systems

The World Wide Web was created in 1991

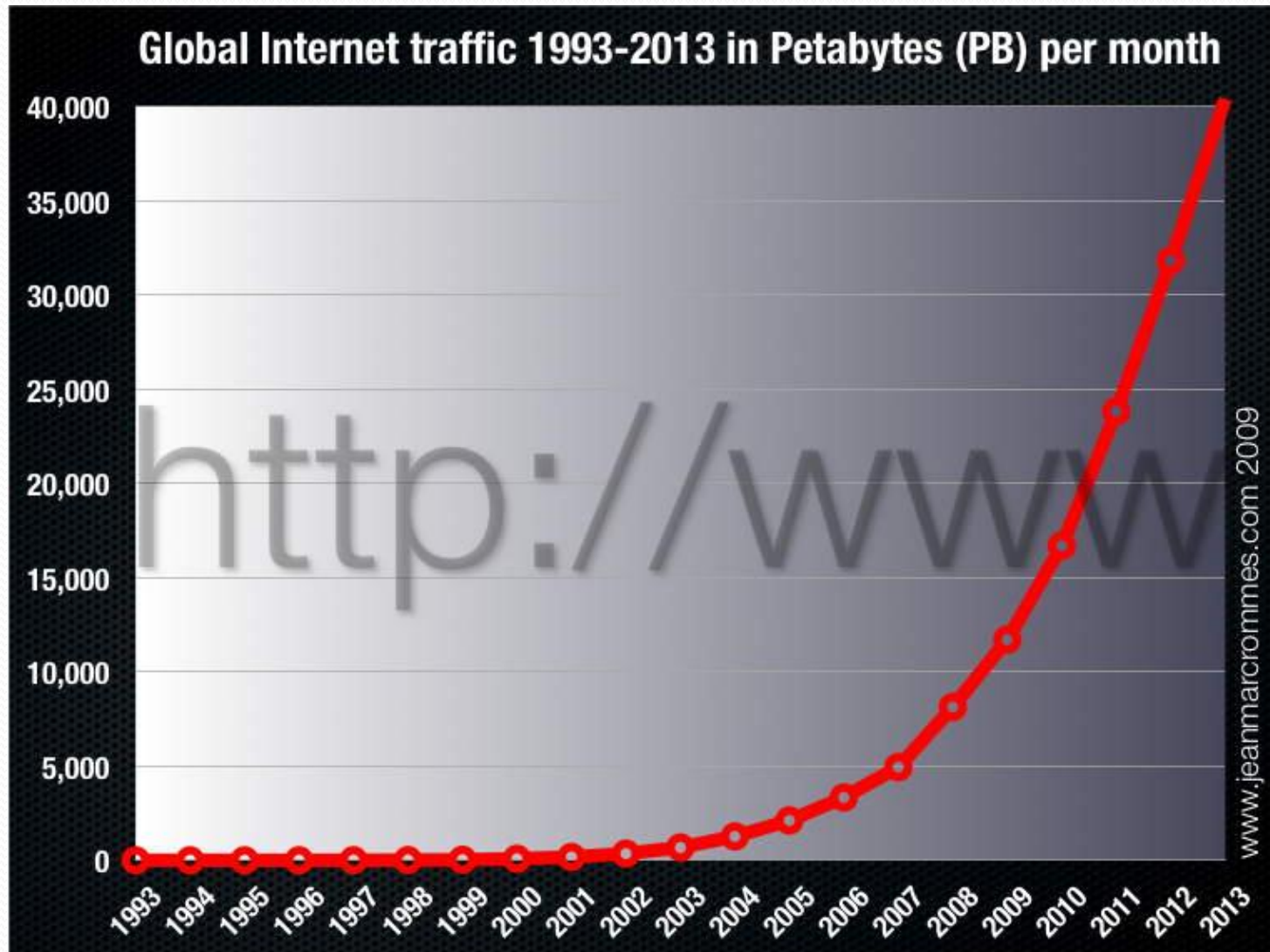


Internet Infrastructure

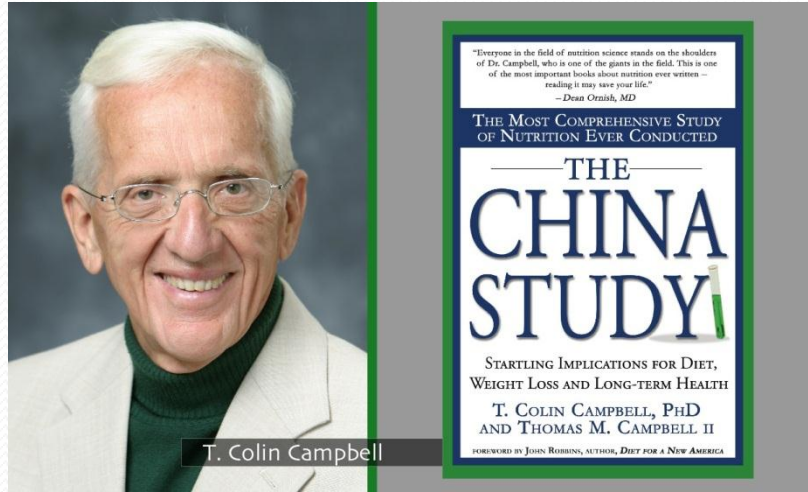
- 6.7 billion people
- 1 billion computers
- 4 billion cellphones
- 1 trillion webpages
- 25 million terabytes of monthly internet traffic
- Traffic growing by 50% per year



Rapid Growth in Internet Traffic



Blogosphere started 1999



T. Colin Campbell



The China Study - 2005

“The Most Comprehensive Study of Nutrition Ever Conducted”

Said evidence was for a vegetarian diet

22 year old English major Denise Minger
rawfoodsos.com

Reanalyzed the data, found:

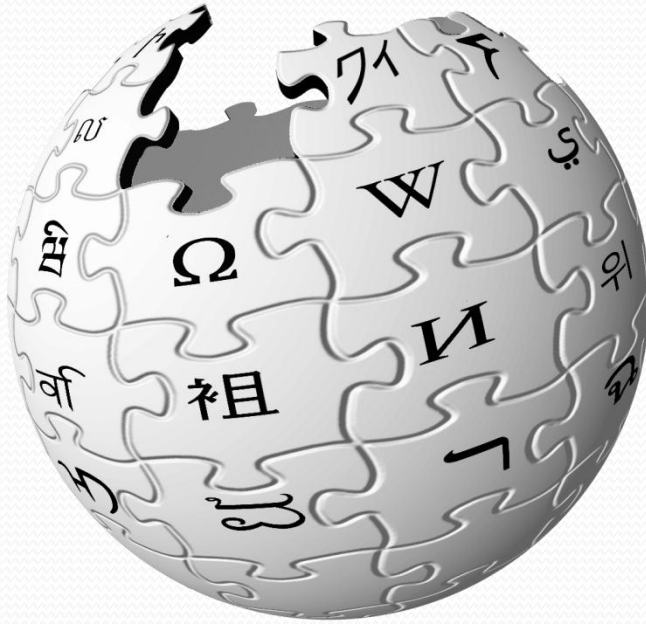
Cancer associated with plant protein

Most toxic food correlation was wheat

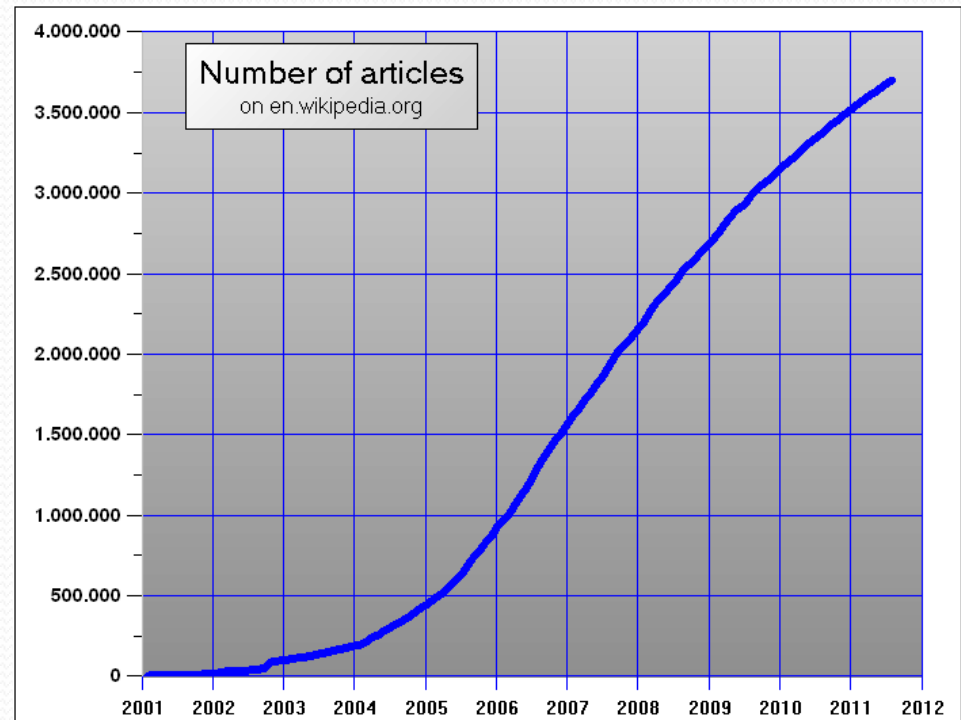
At A Glance



Wikipedia was created in 2001

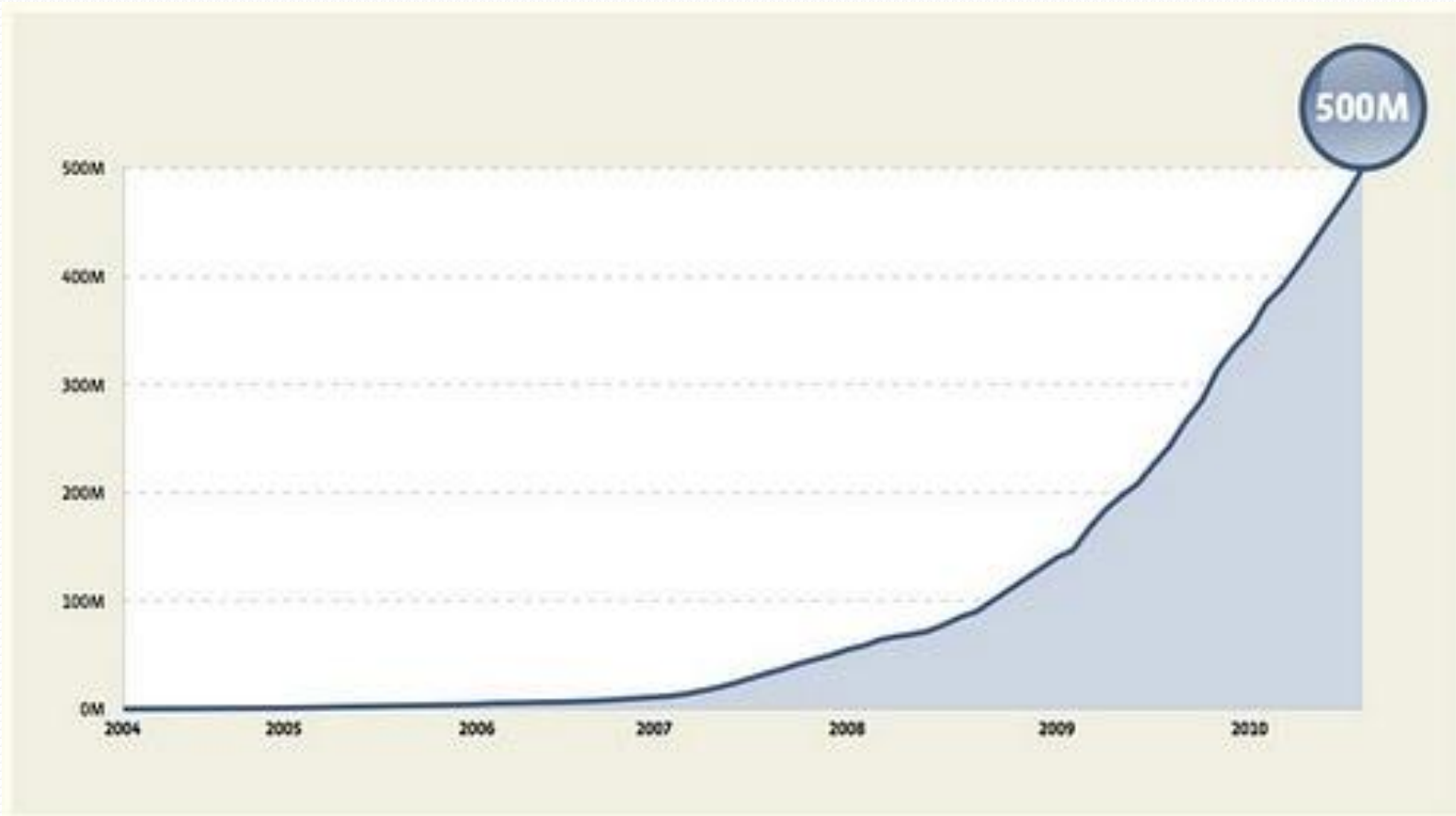


WIKIPEDIA
The Free Encyclopedia



Wikipedia: 3.5 million articles
 Britannica: 65 thousand articles
 Library of Congress: 119 million

Facebook was created in 2004



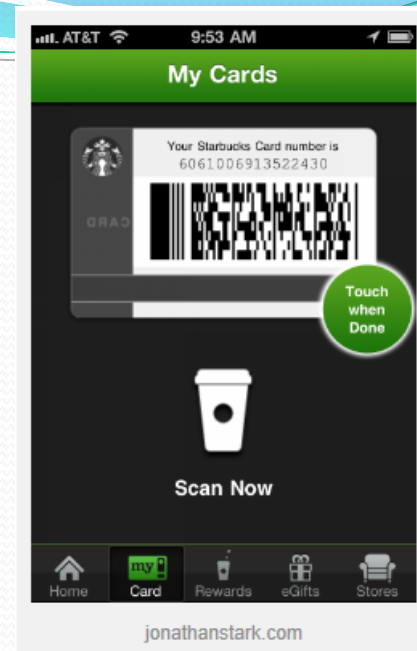
Web Crime

- Cyber bullying
- Cyber stalking
- Cyber defamation
- Sexting
- Web scams
- Spam
- Viruses
- Phishing
- Identity theft
- DOS attacks



Web Altruism

- Wikipedia contribution
- Most bloggers selfless
- Reviews on Yelp and Amazon
- Jonathan's Card – Free Starbucks Coffee for anyone! People donated \$8000!
- Positive viral videos
- Kiva microloans

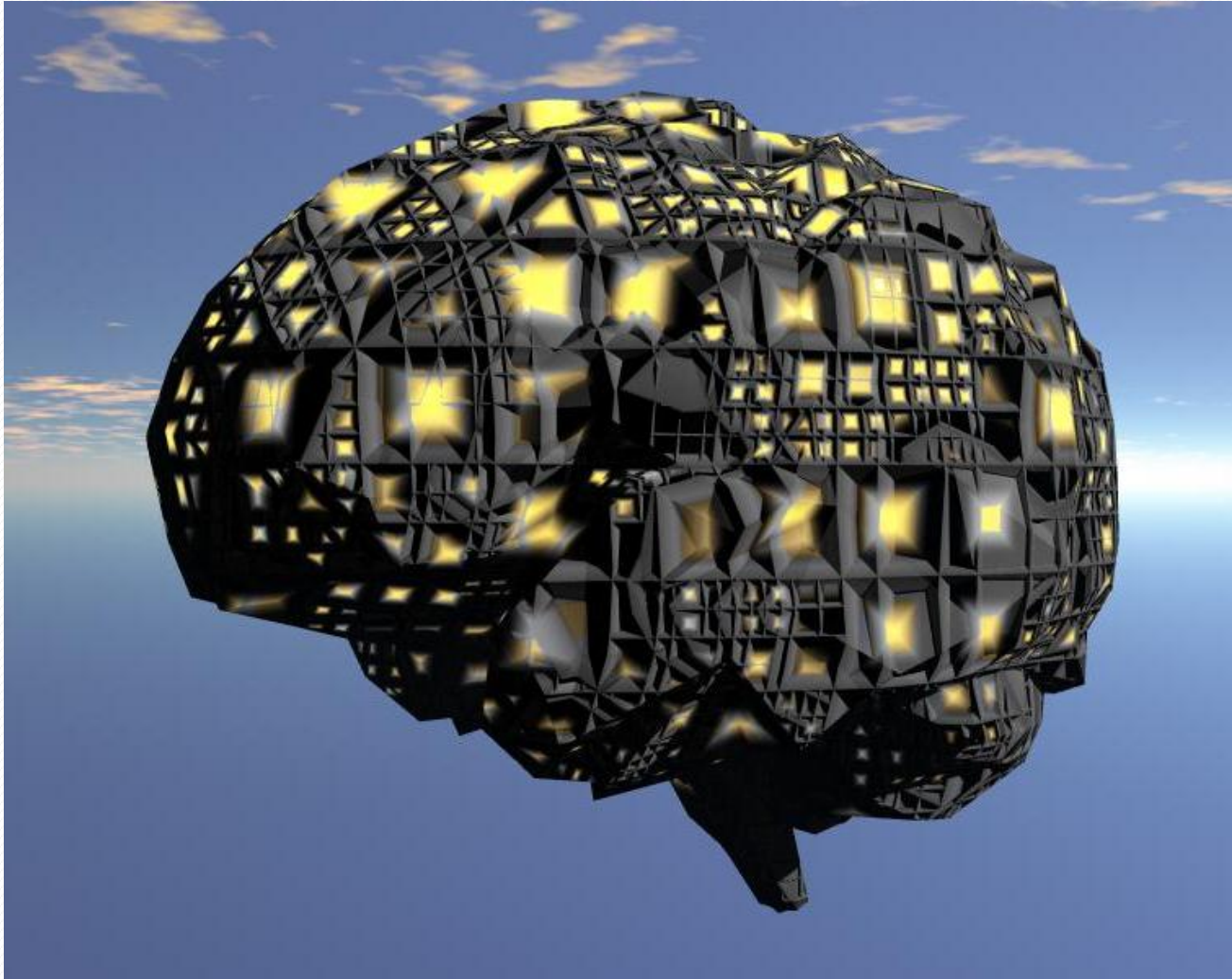


Future Web Advances

- Better identity and security
- Better reputation systems
- Semantic searching
- Semantic group decision making
 - beyond voting, polls
- Smart monitoring of news
- Smart simulation and prediction
- Better integration with economy
- New tools for invention and creativity



Is the web becoming a kind of Global Mind?



The Beehive as Organism

Individual bees can't survive

Beehive is "warm blooded":

- Bees shiver if too cold

- Spread water if too warm

Castes are like organs

Queen is like ovaries

Bee type is like cell type

Decision making on response

Hive cognition

Reproduction like mitosis

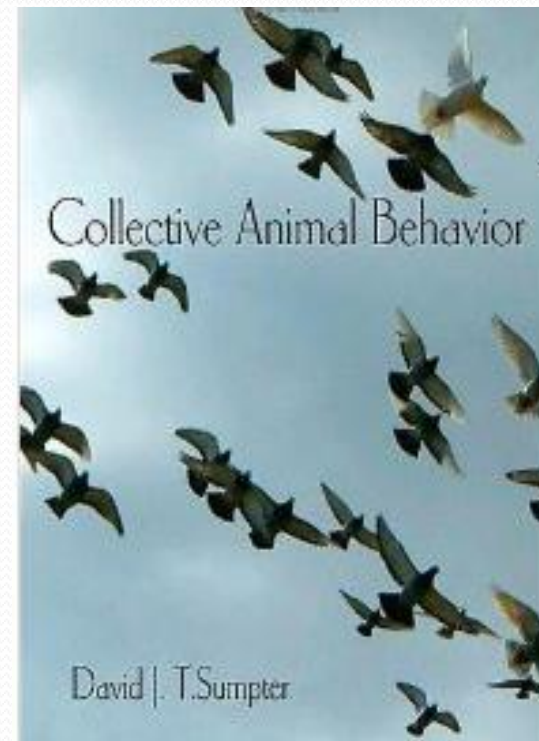
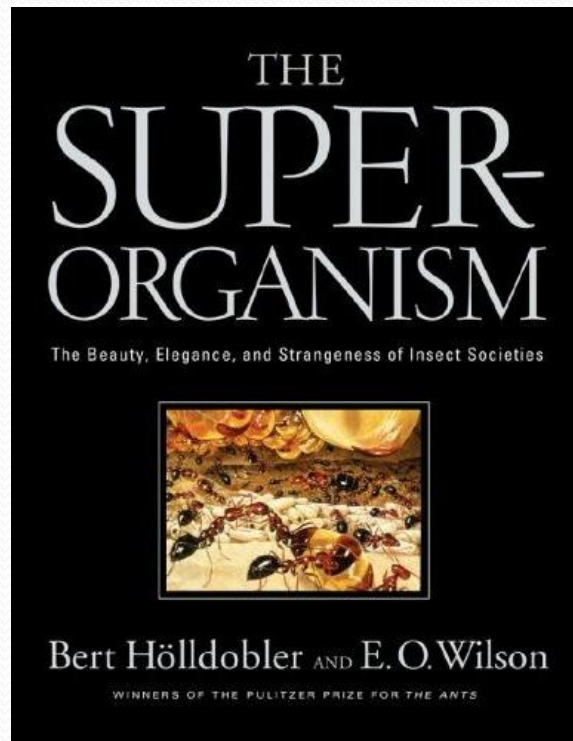
Dance like neural firing



New Understanding of Collective Behavior

Hives and colonies are much smarter than their members

- Honest signalling
- Quorum-based decision making
- Polymorphic types
- Development of “organs”





Copyrighted Material

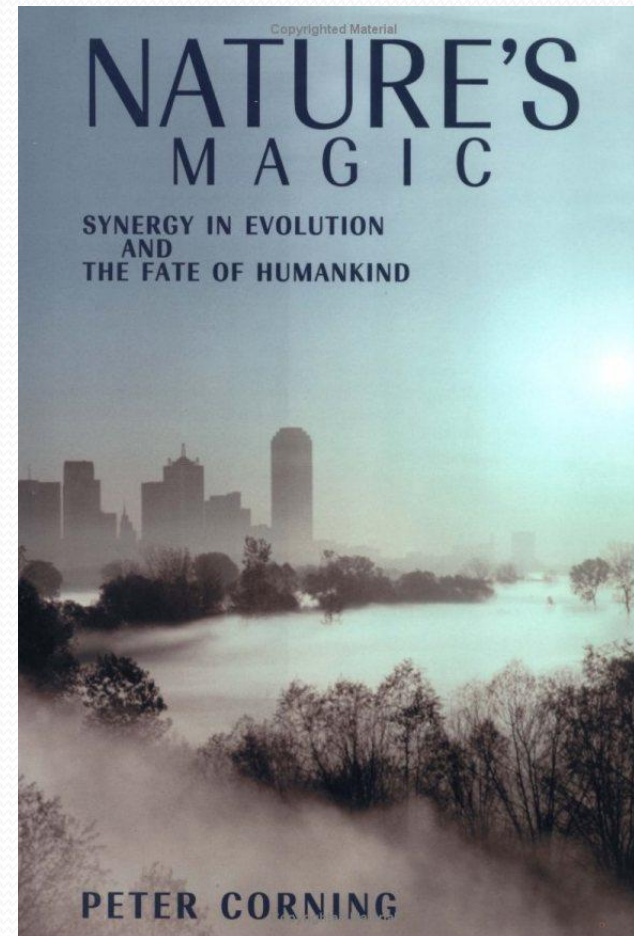
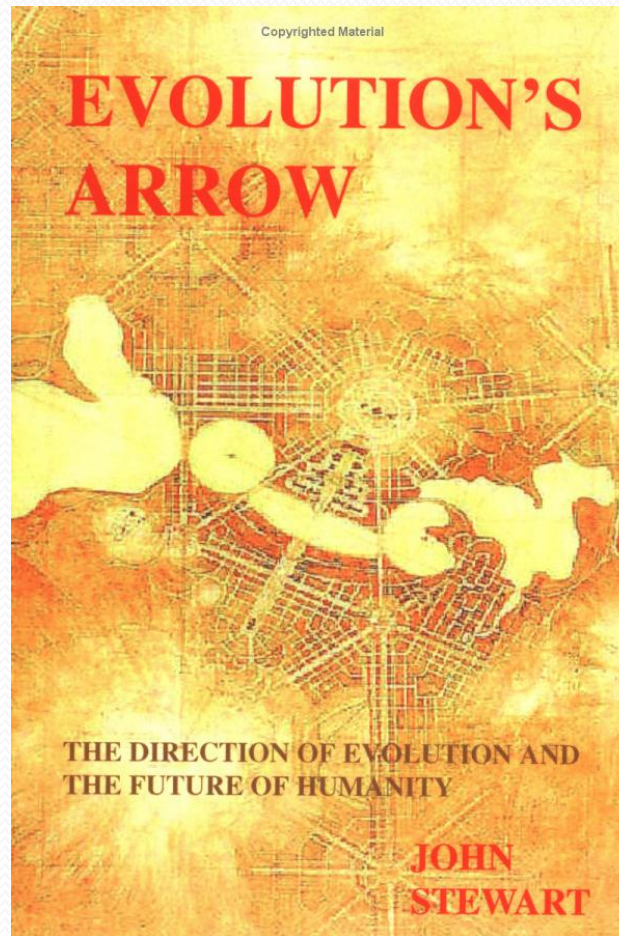
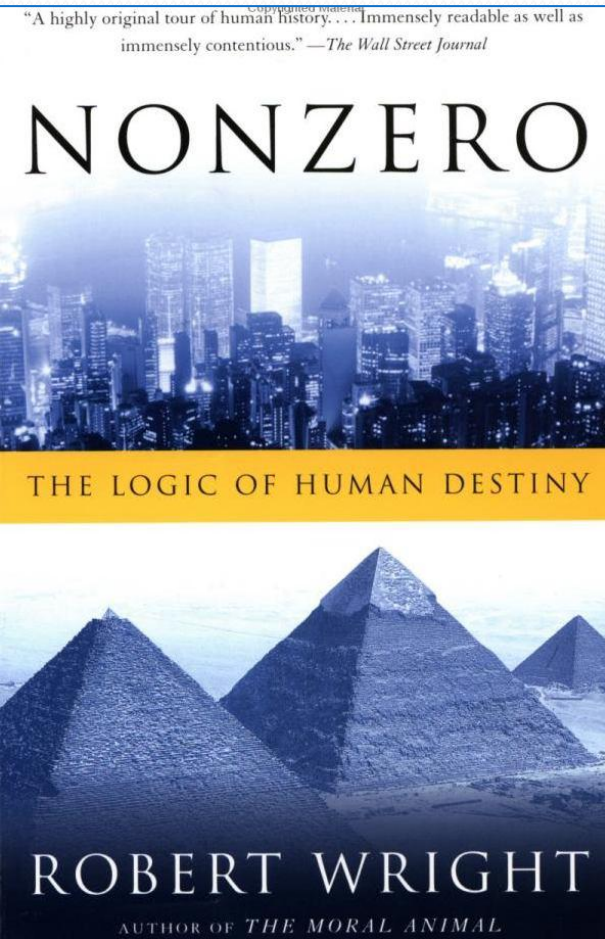
JOHN MAYNARD SMITH & EÖRS SZATHMÁRY

THE MAJOR TRANSITIONS IN EVOLUTION



1. Free molecules -> Compartments
2. Free replicators -> Chromosomes
3. RNA -> DNA + Protein
4. Prokaryotes -> Eukaryotes
5. Asexual -> Sexual
6. Protists -> Multicellular
7. Individuals -> Colonies
8. Primates -> Human language

Evolution Has A Direction



Synergies Drive Evolution

Economies of Scale



Complementary Needs



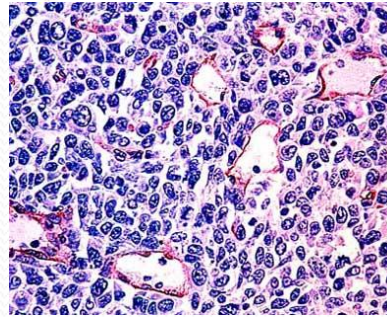
Complementary Abilities



Temptations to Cheat!

Prisoner's Dilemmas:

- Egg laying worker bees
- Cancers
- Siblicide
- No food call monkeys
- No warning call birds
- Criminals
- Bit torrent leechers

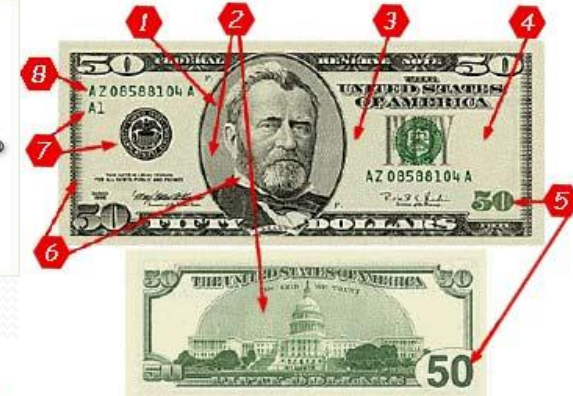


Temptations to Lie!

- Cuckoo birds
- Wrong monkey calls
- Counterfeiters
- Fake Amazon reviews
- Spam
- Ad Fraud, Phishing, Pharming, Trojans, Identity Theft



amazon.com



Koobface

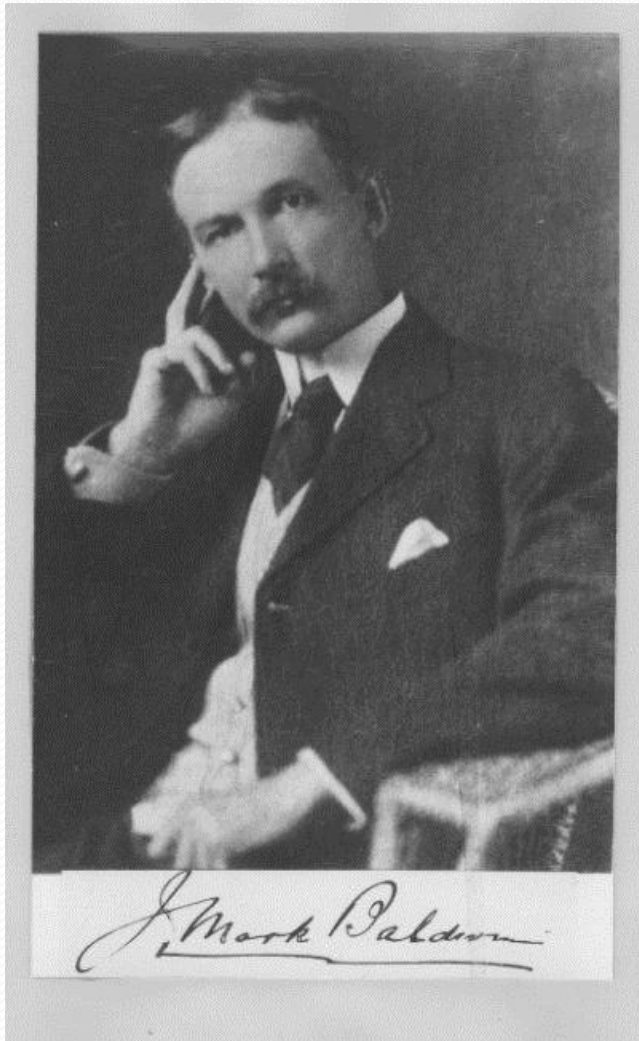


Mechanisms for Cooperation

- Genetic relatedness
- Reciprocal altruism
- Public reputation
- Neyman bounded automata
- Costly fitness signalling
- Immune systems, police, contracts, courts
- Punishing non-punishers
- “Collective Baldwin Effect”



The Classic Baldwin Effect



" A New Factor in Evolution."

by J. Mark Baldwin

American Naturalist 30, 1896: 441-457, 536-554.

- Evolution of creatures that learn
- Selection follows learning
- What used to be learned comes to be built in at birth
- Looks Lamarckian!
- “Downloading” learned behavior into the genome.

New Baldwin Effects

- **Deliberative Baldwin Effect:** Creatures that reason shape their evolution – Evolution *can* look ahead
- **Taught Baldwin Effect:** Teachers shape student – “Download the teacher”
- **Cooperative Baldwin Effect:** Group mind shapes individuals – who internalize group goals
- **Meta-Baldwin Effect:** Can “download” not just outcomes, but also the *program*! Mental decision making becomes genetic decision making

Bee Mind and Hive Mind Co-evolve



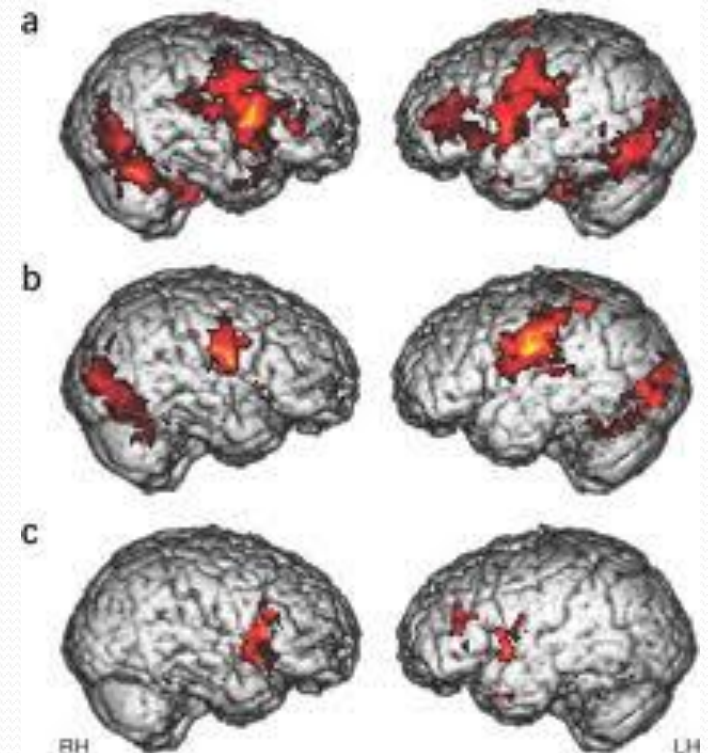
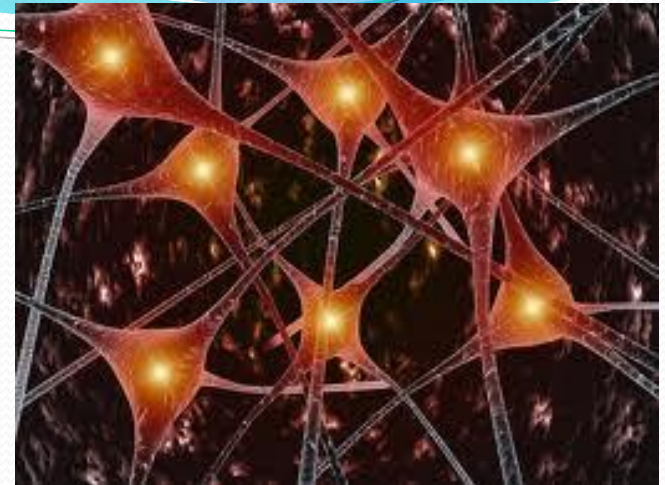
Human/Group Coevolution

Our minds are both egoic and social.



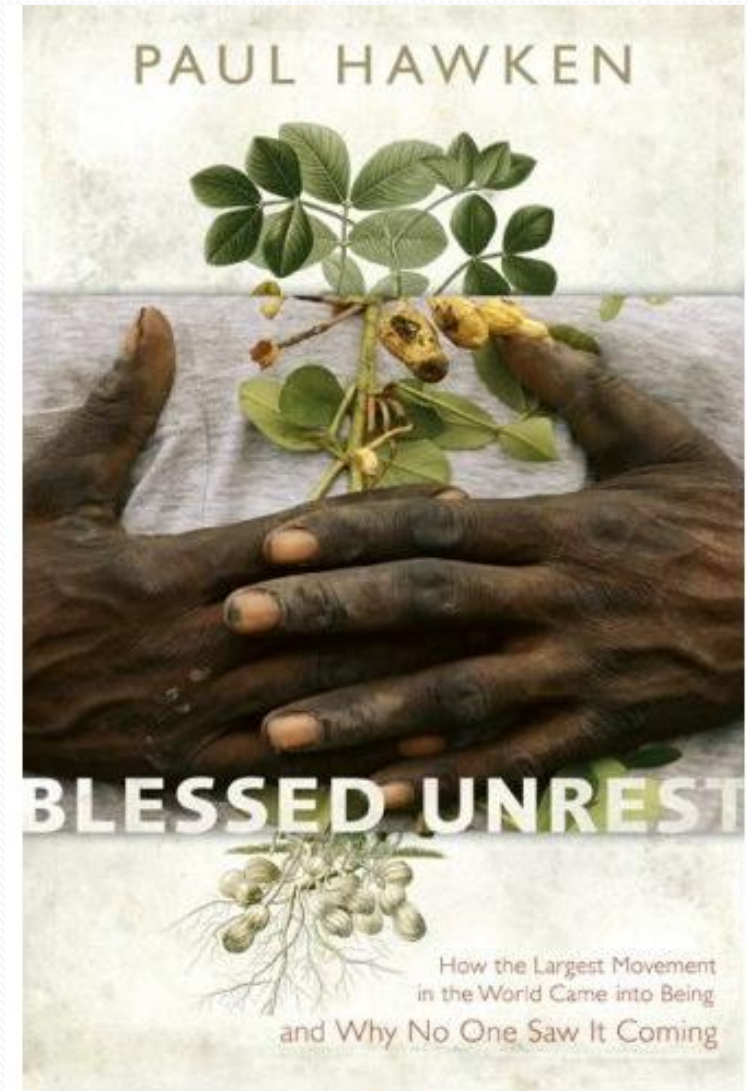
Mirror Neurons

- We are wired for empathy, sociability, attachment, affection, companionship
- 2.5 year old child recognizes themselves in mirror
- 8 year olds learn about birth and death
- Empathize with other's struggle
- Celebration of life – solidarity – Homo empathicus



Human Moral Evolution

- Slavery
- Torture
- War crimes
- Women's rights
- Racial equality
- Animal rights
- Ecological movements
- Sustainability
- ...



Science of Happiness

Positive Psychology – Seligman – 1998

- *Hedonic* – “Feeling Good” – pleasant sensations and material possessions
- *Eudaemonic* – “Doing Good” – Doing what we are best at in serving society
- *Chaironic* – “Being Good” – connect with and trust something larger than self

How should we live?

- Develop our own compassion and cooperation
- Sense the wonder in being part of great transformation
- Contribute to the unfolding of the whole
- Prepare our children for a new reality
- Recognize that many types are needed
- See that the global mind may have more continuity than our physical bodies
- Develop our compassion for the whole of humanity

“Evolutionaries”



"Great Story Beads"



INTEGRAL ENLIGHTENMENT
SPIRITUAL PRACTICE FOR AN EVOLVING WORLD