



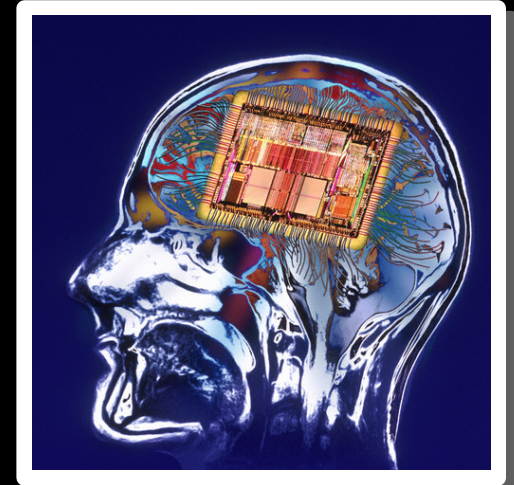
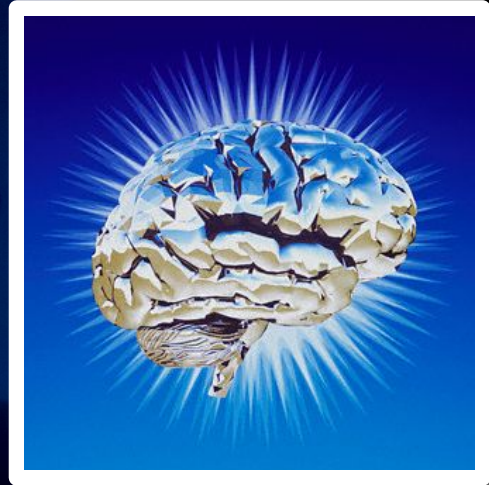
Mind upgrade

**Information technologies,
methods and practices
for mind enhancement**

*Danila Medvedev,
General Director, KrioRus
Russian Transhumanist Movement*

www.kriorus.ru, www.transhumanism-russia.ru

Structure of the talk

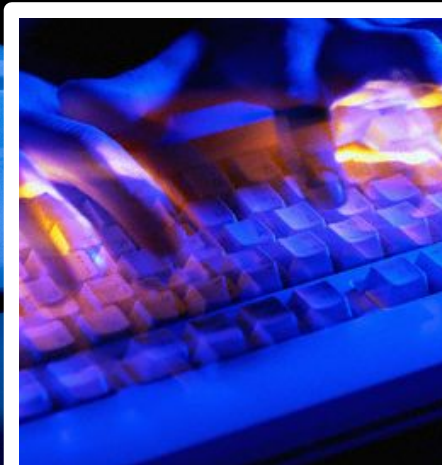
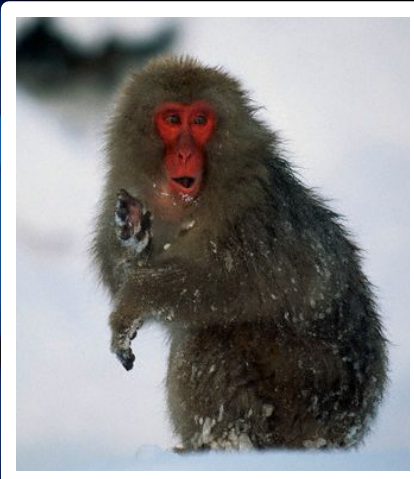


Problem

Solution

Tools

Vision



Defining the problem

- **A: limitations of today**
- **B: limitless future**
- **How do we get from A to B?**
- **Thinking as software**
- **What is “IA”?**



Solution strategy

- Approaches to IA
- Methods of IA
- Proposed general strategy



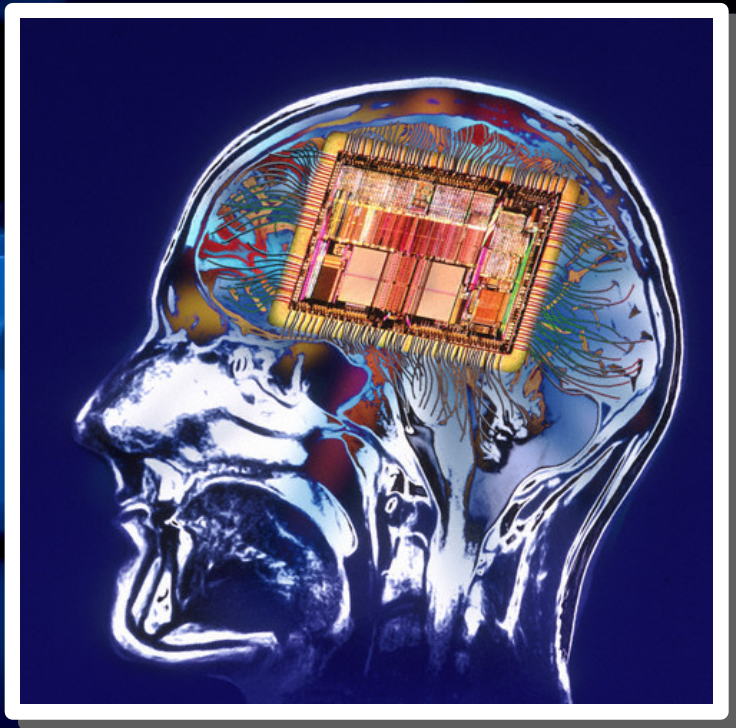
Tools

- Thinking like a genius
- Being an efficient *informavore*
- Mapping your mind
- Getting things done
- Upgrading others forcefully
- Gadgets
- This is your brain on drugs

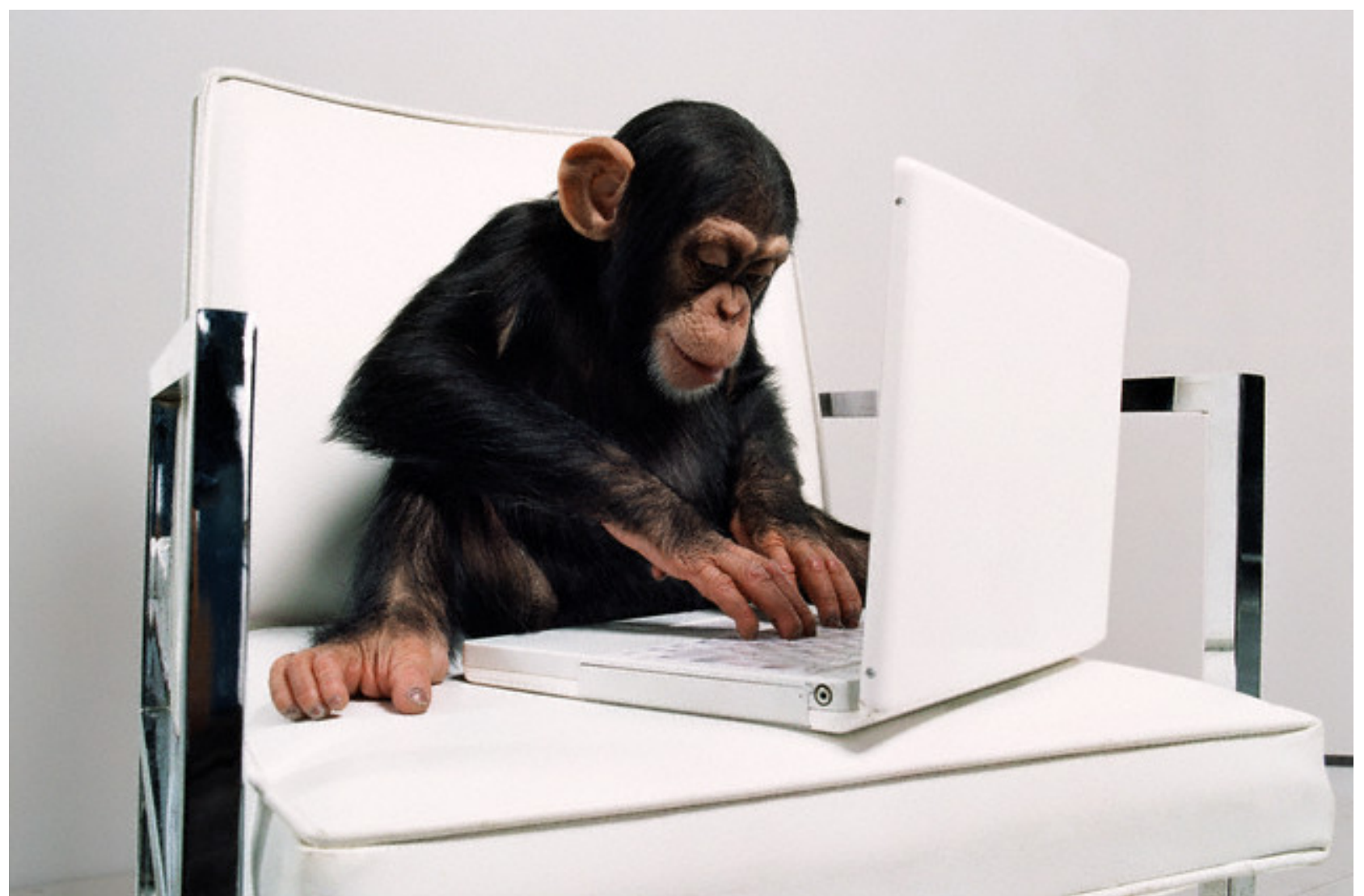


Vision

- The shape of things to come
- Estimated Time of Arrival
- Connecting now and then



Defining the problem



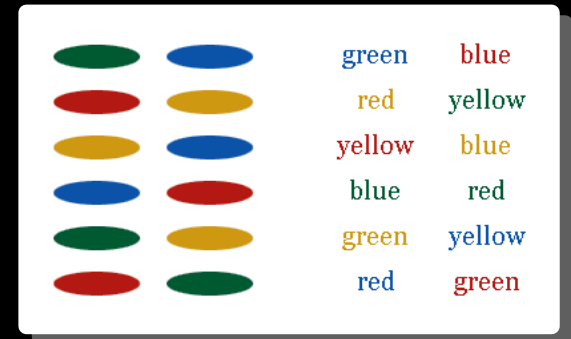
A: limitations of today

- **Brain is a system evolved for certain environment and tasks**
- **It is not a universal Turing machine, it has weaknesses, limitations, biases and bugs**
- **All “human errors” are caused by our limitations**
- **But we don’t even understand the limitations**

A: what are the limitations?

- **We don't even understand the limitations!**

- Simple cognitive limitations: 7±2 items in operating memory, etc. (Stroop, Span, Keep Track, Dot-probe)



- Cognitive biases: studied to some extent: probability, behavioral, social, memory biases

$$\forall \theta \in [0, 1]$$

$$P(\theta) = B(\alpha_B = 1, \alpha_W = 1) = \frac{\Gamma(\alpha_B + \alpha_W)}{\Gamma(\alpha_B)\Gamma(\alpha_W)} \theta^{\alpha_B-1} (1-\theta)^{\alpha_W-1} = \frac{\Gamma(2)}{\Gamma(1)\Gamma(1)} \theta^0 (1-\theta)^0 = 1$$

- No researcher has studied the inability to write a bestselling novel or learn electrical engineering at the reading speed

B: limitless future

- **Likely (almost certain) prospects:**
 - Merging with the AI
 - Superintelligence
 - Recursive self-improvement
 - Technological Singularity

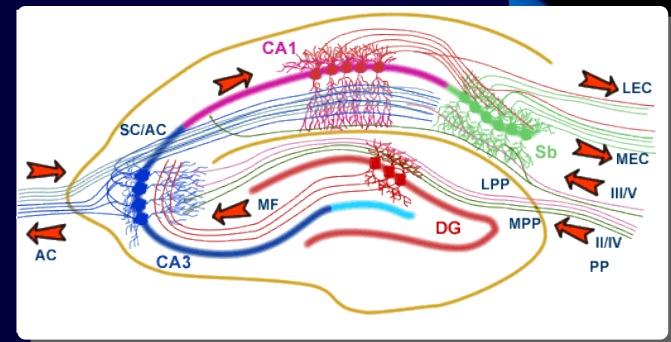
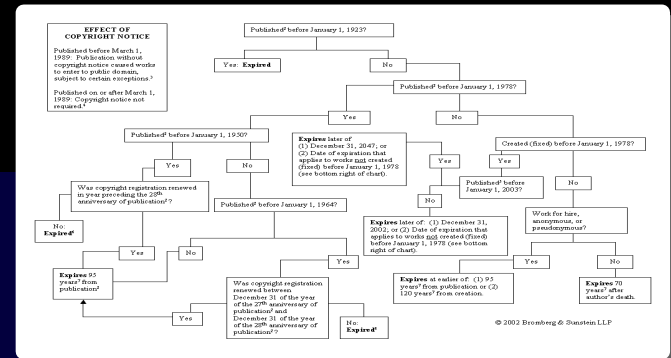


How do we get from A to B?



Thinking as software

- Human brain is a modular system
- It has evolved distinct cognitive functions
- Instincts are algorithms, complex thoughts are complex algorithms
- Software-inspired mind upgrade strategy
 - Manage the programs
 - Write and debug new programs
 - Integrate with silicon computers
 - Migrate to nanocomputers



To merge with the machines you have to think like them

What is “IA”?

- Intelligence amplification* (IA) refers to the effective use of information technology in augmenting human intelligence. The theory was developed in the 1950s and 1960s by cybernetics and early computer pioneers.

* AKA “cognitive augmentation” and “machine augmented intelligence”

IA history

- ***Speculation*** on “amplifying intelligence”: *Introduction to Cybernetics*, 1956
- ***Idea of Man-Computer Symbiosis***, 1960
- ***Vision of Augmenting Human Intellect: A Conceptual Framework***, 1962
- ***Partial realisation*** by all of us, 1960s-now

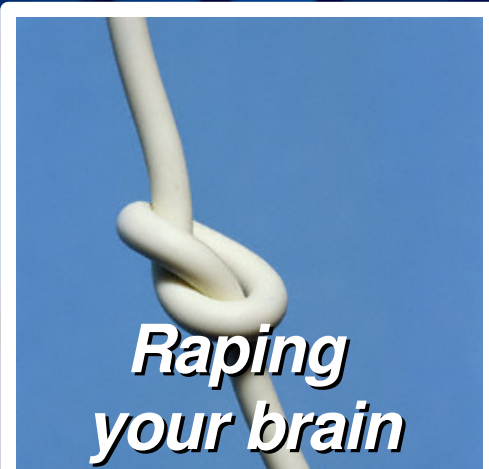
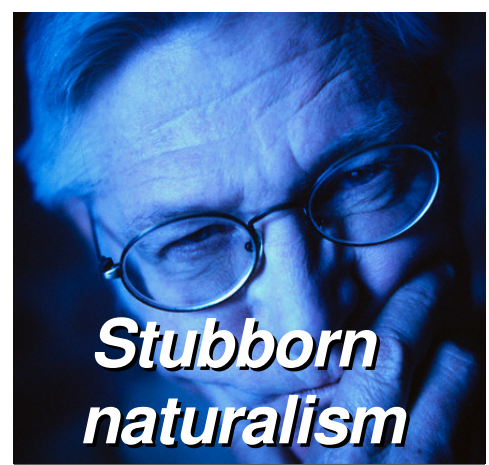


A photograph of a computer setup in a dark room, illuminated by a strong blue light. In the foreground, a white computer keyboard and a white computer mouse are visible. The mouse has a small red light glowing from its base. In the background, the lower part of a computer monitor is visible, showing a small circular logo. The overall mood is tech-oriented and futuristic.

Strategy

**Personal approaches, existing
methods, proposed strategy**

Approaches to IA



Methods of IA

- **Wetware-based**
 - Mnemonic techniques – inefficient
 - Nootropics – just emerging
- **Software-based**
 - Patterns and strategies
 - ICT tools (and paper tools), such as mindmaps
- **Hardware-based**
 - Devices (neurofeedback, brainwaves, etc.) – too crude
 - Implants – not here yet

Proposed general strategy

- **Capture everything**
 - Use GTD methodology to track commitments
 - Use Lion Kimbro's method to track thoughts
- **Manage life, projects, tasks**
 - Have a good reference system
 - Use an effective process
 - record ideas
 - collect and develop information
 - turn them into projects
 - realise them
- **Use creativity techniques**
- **Organisational system**
 - Keep track and stay in control

A blue-tinted photograph of a computer keyboard and mouse. The keyboard is on the left, and the mouse is on the right. The mouse has a red light on its front. The background is dark.

Tools

**Thinking well, processing information,
mapping your mind, working with
others, using gadgets and nootropics**

Thinking like a genius

- **TRIZ**

- A methodology for creatively solving technical problems
- TRTS – a theory of technical systems development
- by Genrih Altshuller



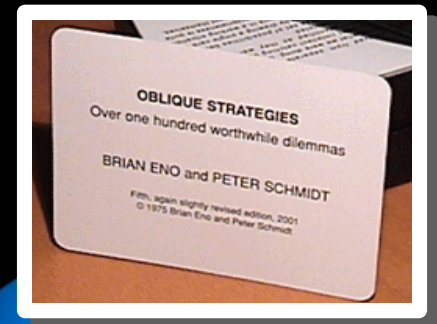
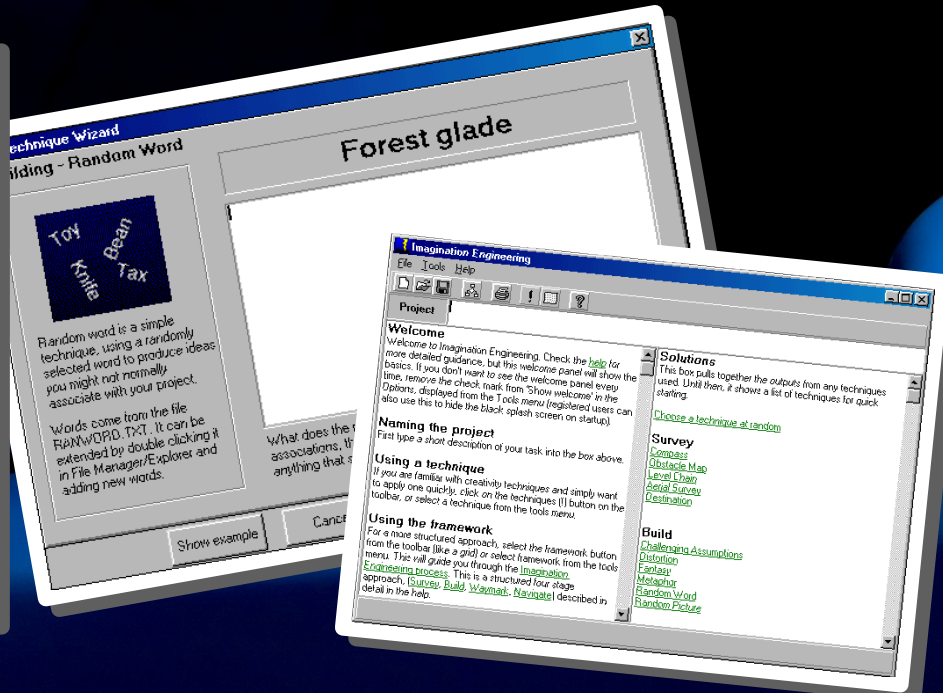
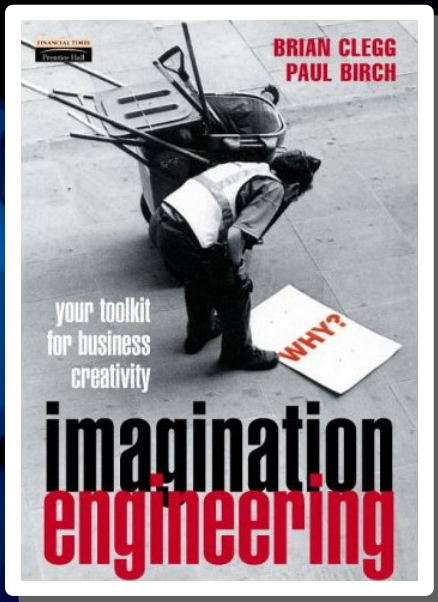
- **DRAGON**

- Cognitively optimised universal visual language



Thinking like a genius

- **Think with your computer**
 - General tools: outlines, mindmaps, visual tools
 - A framework: Imagination Engineering
 - A simple tool: Oblique strategies



Being an efficient informavore

- **Find**

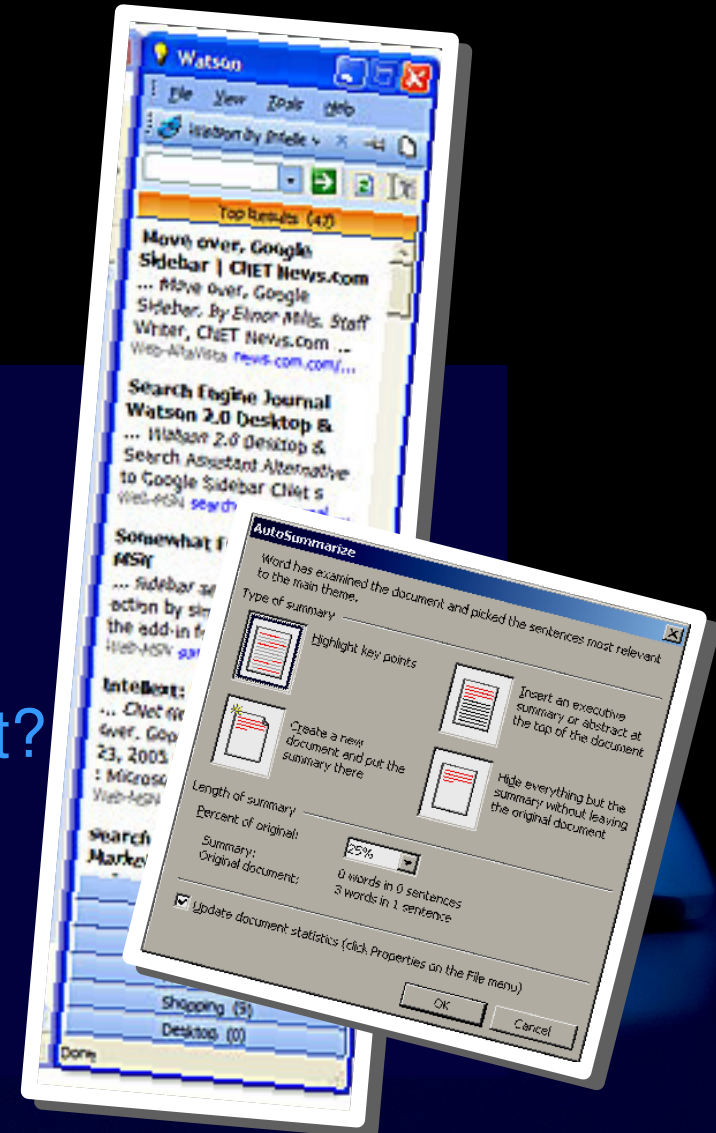
- Watson (contextual search)
- BrainBoost, other advanced search engines
- Web 2.0/3.0 – RSS, tags, wikis, blogs

- **Process**

- AutoSummarize (MS Word)
Who knows about it? Who uses it?

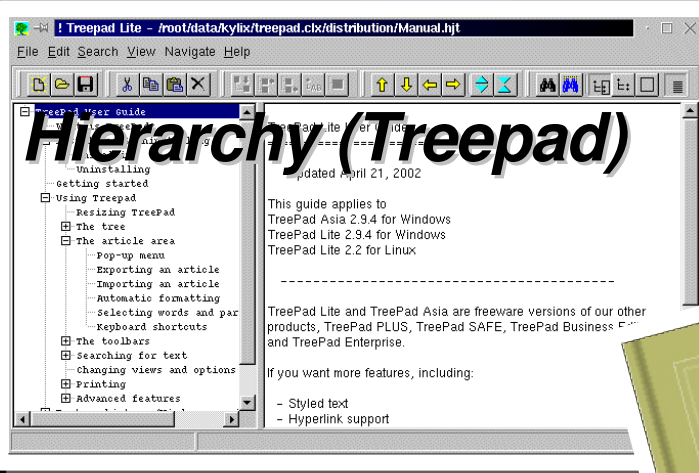
- **Organise**

- Treepad, FreeMind,
- Wikis
- OneNote, RecallPlus

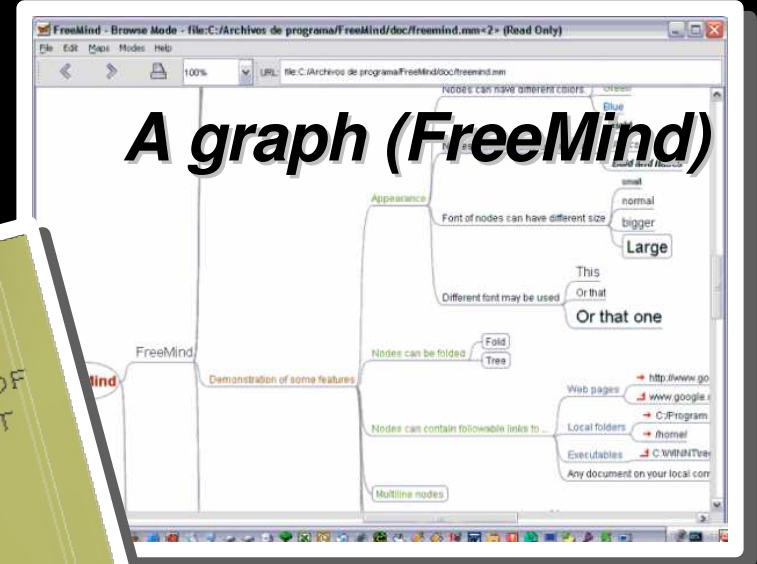


Mapping your mind

Hierarchy (Treepad)



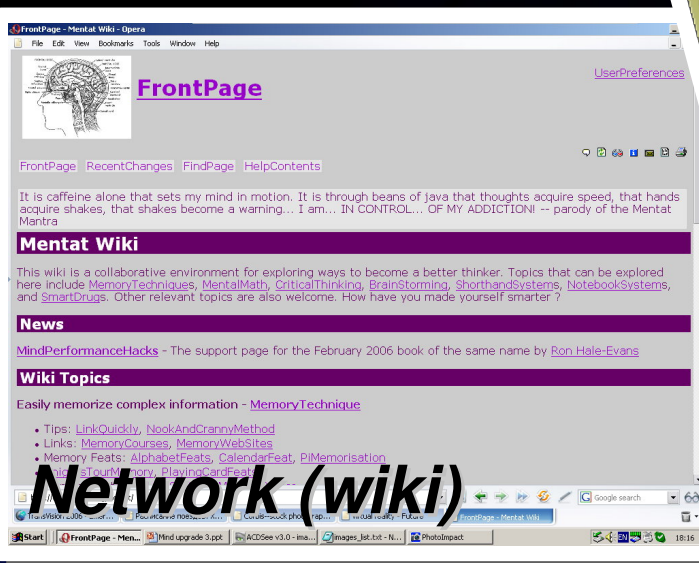
A graph (FreeMind)



HOW TO MAKE A
COMPLETE MAP OF
EVERY THOUGHT
YOU THINK

LION KIMBRO

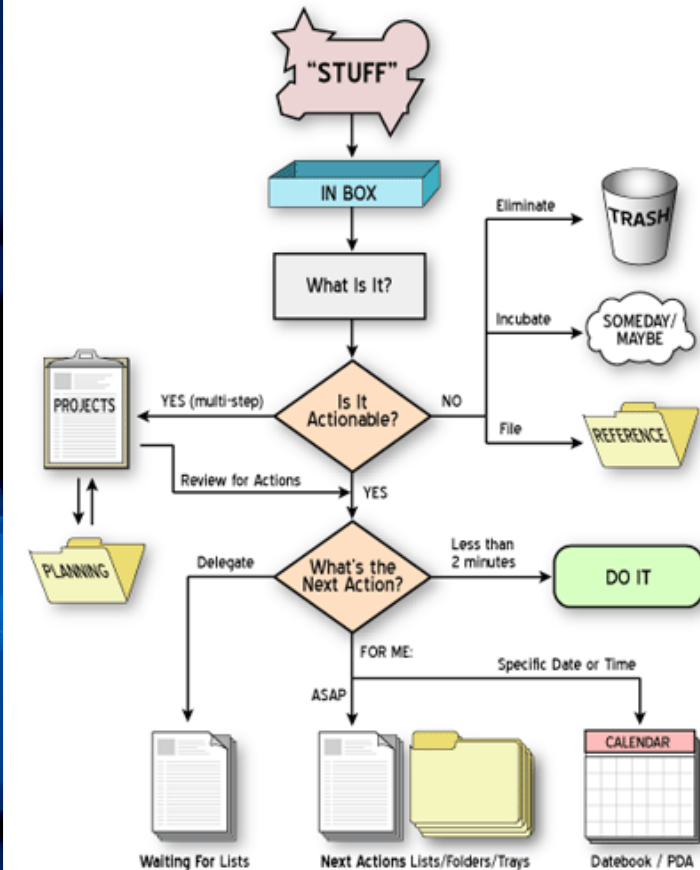
FrontPage



Network (wiki)

A complete map

Getting things done

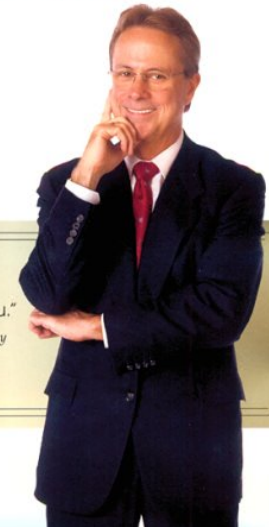


David Allen

Getting Things Done

The Art of Stress-Free Productivity

"The personal productivity guru."
—Fast Company



Upgrading others forcefully

- **Collaboration**

- wiki
- real-time editing
- calendar tools

- **Web**

- Semantic web and info agents: Once machines can understand and use information in a standard way, the world will never be the same.

- **New tools**

- Not just a tide of information but also of new tools for managing information

Gadgets

Bandwidth and time per interaction are key



***Paper
is dead***



***PDA is a mind
companion***



***Wearables,
then implants***

This is your brain on drugs

*for a true
24/7 lifestyle*



a must-use
for memory
and learning*



*you wouldn't
be bored now*

** the safest drug ever*



A photograph of a computer setup in a dark room, illuminated by a strong blue light. In the foreground, a white computer keyboard and a white computer mouse are visible. The mouse has a small red light glowing from its base. In the background, the lower part of a computer monitor is visible, showing a small circular logo. The overall mood is futuristic and high-tech.

Vision

**Today, the shape of things to
come, ETA, connecting now
and then**

Today: Recording your life



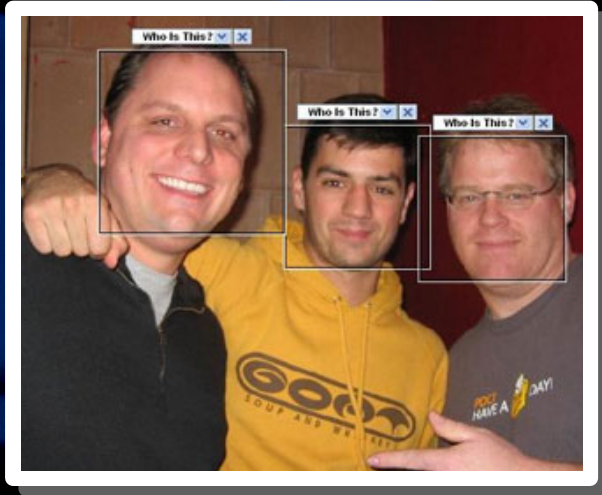
A life you don't remember is a life you have not lived.



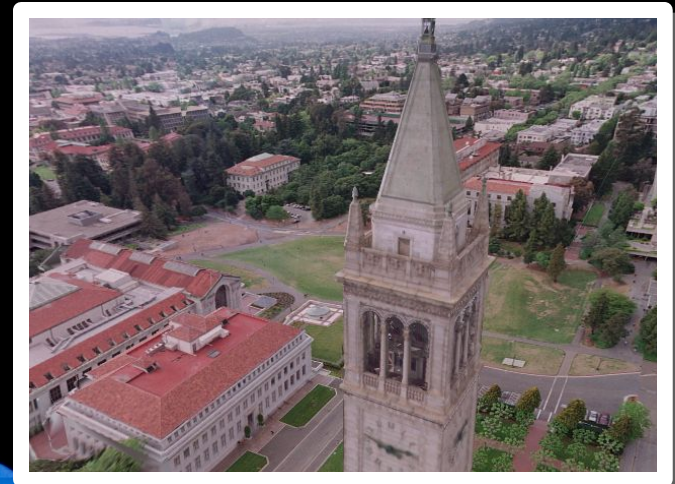
Sensor suit, an RTM project

Today: Photo processing

Recognize faces



*Build 3D models
from photos*



Turn that into VR

Today: Virtual Reality



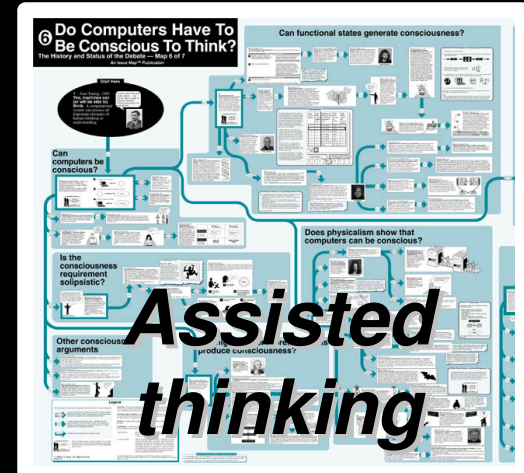
The shape of things to come



From I/O to random access



VR, AR



argument maps, graph
interfaces, visual language



All data captured and shared

Estimated Time of Arrival

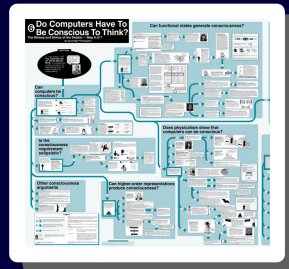
- Brain computer Interface (2015–2025)
 - **requires: understanding neurons, fast computers, micro devices**
- Assisted thinking (2000–2025)
 - **requires: data digitising and formalisation, digital lifeflow, weak AI**
- Mixed reality (2015–2025)
 - **requires: computer vision, world modelling, comfortable interfaces**
- All data captured and shared (2010–2020)
 - **requires: fast computers, cheap sensors, large storage**

Connecting now and then

uploading
random
access BCI
partial
thought BCI
sensoric BCI
retinal projectors
wearable
displays
hearing, vision
for disabled
gesture,
eye tracking



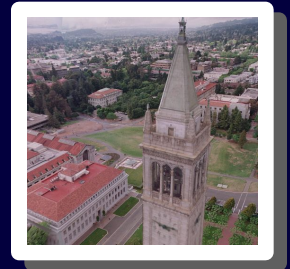
mind reverse-
engineering
man-computer
symbiosis
business automation
computer-aided
thinking
xml integration
database-like
data stores
Web 3.0, 4.0
context-sensitive
search
improved search



life in cyberspace
virtual reality
augmented reality
digitising the world



matter
independence
life, physics
modelled
world model built
personal data
captured



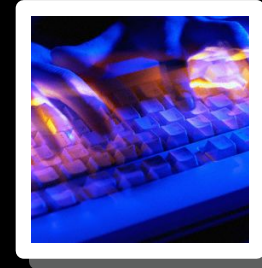


Let's review

**What do you remember from
this presentation?**

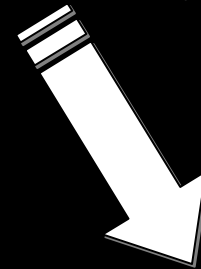


The “upgrade plan”



Do it now!

- thinking
- processing info
- mapping your mind
- getting things done
- collaborating



Watch this

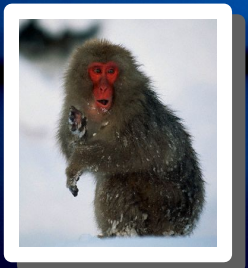
- future:
- brain-computer interface
 - assisted thinking
 - mixed reality
 - all data captured and shared

***Accept
the solution***

- general strategy:
- use a framework
 - manage life
 - put data into a good system
 - stick to the process
 - use creativity techniques

***Understand
the problem***

- we're monkeys
- biological limitations we don't know them
- to merge with computers need to think like them





*Review this presentation**

<http://danila.spb.ru>

- This very presentation (ppt + wikified)
- Detailed notes
- Links to additional information

** when I get home*

Your next destinations

- Start from the portal
 - www.aleph.se/Trans/Individual/Intelligence/index.html
- Get familiar with the topic and collaborate on wikis
 - Mentat Wiki: <http://www.ludism.org/mentat/>
 - creative and critical thinking, notetaking, nootropics
 - Mind performance hacks
 - en.wikipedia.org/wiki/Intelligence_amplification – IA history
 - en.wikibooks.org/wiki/Intelligence_Intensification
- RSS the “hacks” sites
 - www.mindhacks.com
 - www.lifehack.org
 - www.lifehacker.com
 - www.health-hack.com





